

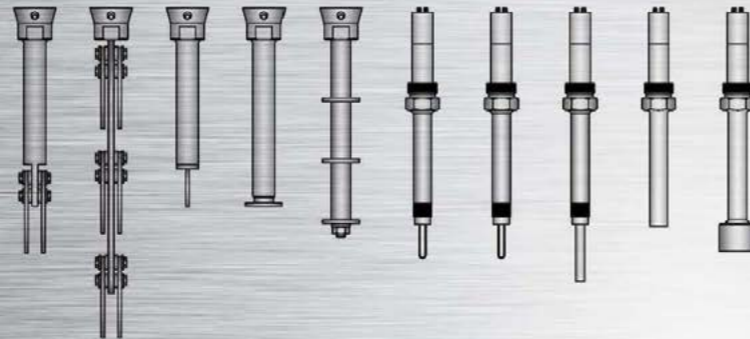


If it concerns corrosion,



It concerns us

### PIPELINE INTERNAL CORROSION MONITORING SYSTEM



GLOAZURE CO., LTD  
www.gloazure.com



Ministry of SMEs and Startups | 60KBIZ Korea Federation of SMEs



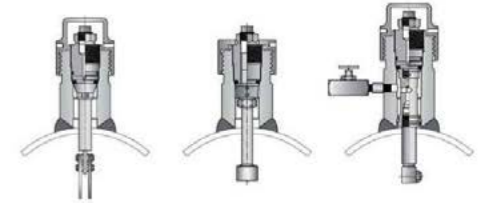
31 October - 3 November 2022  
Abu Dhabi, United Arab Emirates



## GLOAZURE CO.,LTD

Since 2007,

We have been producing Pipeline Internal Corrosion Monitoring Systems and Chemical Injection & Sampling System.



Corrosion monitoring system?



Coupon and Probe are conventionally and commonly used in high/low pressure flowlines and vessels in order to detect information on internal surface corrosion. Installation and retrieving these devices under pressure can be assured by Retrifer tool. Gloazure's Retrifer tool provides a safe and effective operation in retrieving coupons and probes under full operating pressure.

Quality Assurance / HSE Program

Gloazure's products are manufactured and inspection & test in accordance our internal restrcit quality program based on Quality Manual - ISO 9001 and ISO 14001 which were achieved in 2008 and 2010 repectively



ISO 9001 ISO 14001

Products ranges for high pressure/ low pressure flowlines

- Corrosion coupon assembly
- Corrosion probe assembly (ER and LPR probe)
- Hydrogen probe assembly
- Bio probe assembly
- Sand probe assembly
- Chemical injection quill & sampling system



## Non-intrusive Corrosion Monitoring System

### DATA LOGGER SPECIFICATIONS

model no. ....	SmartCorrazure
corrosion rate : .....	resolution to 0.001" (0.025mm)
min. measuring thickness .....	0.040" (1.02mm)
protocol/communication .....	Modbus / RS-485, 2-wire, max. 1000' (305m)
battery type .....	Li D-cell, 3.6 VDC, qty. 2
battery life .....	2 years (typical, based on 1 reading/day)
storage capacity .....	3000 readings (FIFO)
UT system channels .....	8 ultrasonic, 1 temperature
digitizer frequency .....	40 MspsData Logger Specification



## Non-intrusive Corrosion Monitoring System

### ENCLOSURE

material / rating .....	cast aluminum / NEMA 4X, IP66
temperature range .....	-4°F to + 140°F (-20°C to +60°C)
dimensions .....	5.44×5.63×5.13" (138×143×130mm)
weight .....	5.2 lb (2.36 kg)

### CONNECTIONRE

network power, data via RS-485-to-USB adapter

### TRANSDUCER SPECIFICATIONS

type .....	dual element
application .....	severe pitting
frequency .....	5 MHz
active area(dia.) .....	0.375" (10mm)
overall (dia. x h) .....	0.75×0.75" (19×19 mm)
no. of transducer .....	1-8
resolution .....	0.001" (0.025mm)
thickness range .....	0.040-6.0" (1.0-150.0mm)
temperature range .....	-22 to +275°F (-30 to +132°C)
attachment .....	magnet/adhesive
Transducer cable type .....	coaxial, 1/4" dia.
maximum length to transducer .....	standard 10' (3.0m), option max. 50' (15.2m)

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## MECHANICAL VALVE INTERLOCKS

GLOAZURE.CO.,LTD  
A manufacturer and specialist for  
Safety Interlocking Device

### What is MECHANICAL VALVE INTERLOCKS ?

It is MECHANICAL VALVE INTERLOCKS in order to avoid any human error in OIL & GAS and other industries fields.

When sequence operations are required, if our key interlocks are used, operators are forced to operate all valves and/or other equipments correctly within the interlock sequence in accordance with that given operation sequence.

Human error has caused majority accidents and disasters at site and it can be happened at any time. Our SAFERLOK, MECHANICAL VALVE INTERLOCKS stop your big concern about human error at site and secure your properties and lives as well.

### Where are MECHANICAL VALVE INTERLOCKS applied?

It will be applied to almost all sequence required operating system such as;  
Valve operating system  
PSV system  
Pigging system  
Deluge system  
Safe machine guard system  
and all sequence required operation system

### How to secure safety?

We have MT (Multi-turn model) / QT (Quarter-turn model) and they have Double key and single key system which can be applied to all valves and other equipments.  
Also we have other special Locking devices for special applications. Our safety design engineer can provide a suitable the best combination of our products.  
Our interlocking devices has internal counting mechanism which can provide adjustable valve or other equipment position.

### How to mount MECHANICAL VALVE INTERLOCKS to valves and other equipments?

We have specially designed compact & universal type mounting adaptors and kits which provide very easy mounting work to valves and other equipments at site or shop. No valve modifications, welding and pipeline shut-down are required.  
We can supply our supervisor or technician in order to support of mounting work to job site or shop if required.  
For detail information, please consult it with our engineer.

## MECHANICAL VALVE INTERLOCKS

GLOAZURE.CO.,LTD  
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Safety Interlocking Device

### The kinds of Interlocking devices

#### A.Type QT(Quarter-Trun)

- for quarter turn operated valve like Ball/Butterfly/Plug valve etc and other quarter turn operated equipments



#### B.Type MT (Multi-turn)

- for multi turn operated valve like Gate/Globe/Diaphragm valve and Gear Box and other multi turn operated equipments



# PIGGING SYSTEM



**GLOAZURE**

## PRODUCTS

Gloazure has been supplying pigging system products in design and manufacturing of following products.

Pigging system design based on ASME "U" requirements.

### STRESS ANALYSIS

Strength Design Calculation

Program : Compress

Version : Compress 2016 Build 7600

### LAUNCHER/RECEIVER

Design Code : ASME SEC.VIII, Dev.1

Pressure : ANSI CL 150 through 2500  
and over

Welding : ASME SEC.IX

NDE : ASME SEC.V



### CLOSURE

Design : ASME Section VIII, Dev.1

Closure Orientation : Horizontal or Vertical.

Connection : Butt Welded and Flanged

Type : Bandlock, Clutch, Clamp ring ,Locking ring etc





## PIPE INSULATORS, END SEALS AND INNER-LINKS

### Fabricated Steel Insulator

GLOAZURE FABRICATED STEEL INSULATORS will safely support carrier pipes of any diameter in steel, cast iron or concrete casings and can, if required be designed to accurately centralize the pipe within the casings. The INSULATOR is fabricated from high grade 14 SWG gauge(2.0mm) steel and is either coated with high grade PVC to a thickness of approximately 15 mils(0.4mm) or zinc plated dependent upon customers requirement. Skids of high density polyethylene are used and these are solid injection moldings capable of withstanding in excess of 25 tonnes and temperatures of 120°C (250°F). Each skid is fixed to the INSULATOR by two welded studs. The skids will suit most types of applications and load requirement, and are available in two thicknesses, 19mm and 38mm. When there is a large differential between carrier pipe and sleeve size, INSULATORS with skid resers are supplied to either accurately centralise the pipe within the casing or radius to customers' requirements. The skid riser is fabricated from 10 SWG(3.2mm) steel and has supporting gussets on 600mm carrier pipe and over. INSULATORS provide triple electrical insulation between the carrier pipe and sleeve: plus

- (a) Pipe Coating
- (b) High duty plastic coating of all steel components (where applicable)
- (c) Insulated skids.

GLOAZURE FABRICATED STEEL INSULATORS are available in any standard size up to 1050mm diameter and can be made to customers special requirements in greater diameters if required. For easy and speed of installation the INSULATORS come in two semi-circular halves which are clamped together by zinc plated or galvanized bolts which are supplied with each INSULATOR.



### Plastic Insulators for Pipelines

GLOAZURE INSULATORS made from high density polyethylene are universally applicable to the installation of pipelines when the carrier pipe runs inside a casing. For this comprehensive range of application the plastic insulators offer a number of advantages such as

- very low coefficient of friction allowing it to slide easily inside casing;
- flexibility of material avoids damage to the protective coating and insulation of pipes;
- concentric support of the carrier pipe within the casing due to an extensive range of skid heights from 5/8"(16mm) to 3 9/16"(90mm).
- outstanding electrical properties of the material satisfy cathodic protection requirements.

GLOAZURE PLASTIC INSULATORS are available for every pipe size and with various skid heights for all pipe materials such as steel, cast iron, clay, asbestos cement, concrete or plastic pipes.



### Special Type for High Temperatures

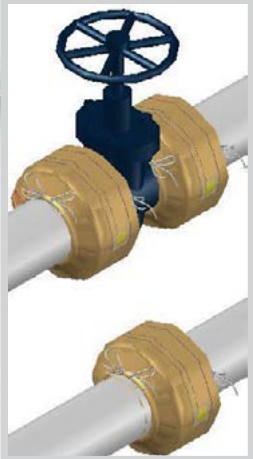
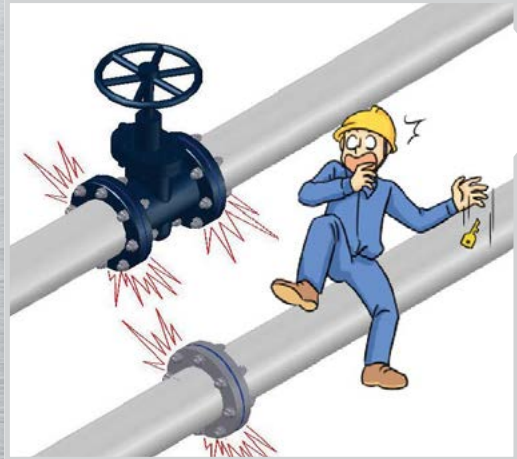
All insulators are available on request in a special version for high temperature ranges which are suitable for

- hot water pipelines
- steam pipelines



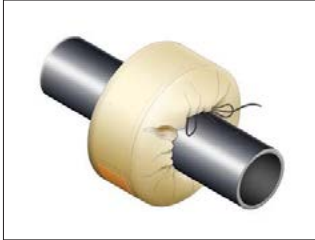


# SAFETY SHIELD



## SAFETY SHIELD

### CLOTH SHIELDS



High design versatility, wide ranged of chemical Resistances UV stabilized.

Our plastic cloth shields are manufactured of clear reinforced cloth for easy visibility or a UV Stabilized

colored cloth which is resistant to sun, rain and fumes. They may include the standard Ph leak indicating patches on the colored shields.

### METAL SHIELDS



For high pressures, high temperatures and whenever a cloth shield is not reliable.

Our metal shields are manufactured in stainless or other materials depending fluid services.