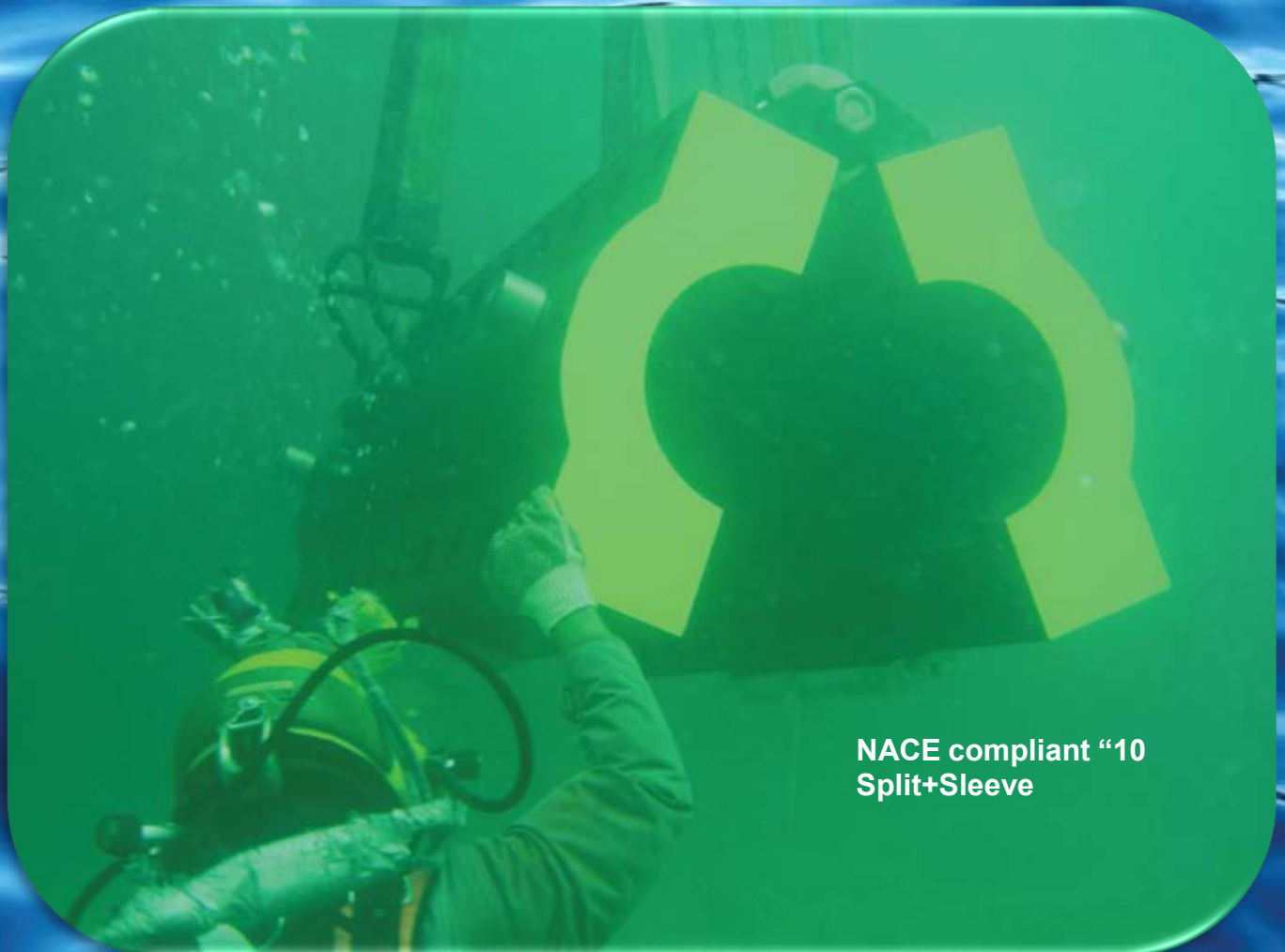


IOS

INTERGLOBAL OIL SERVICES

OFFSHORE

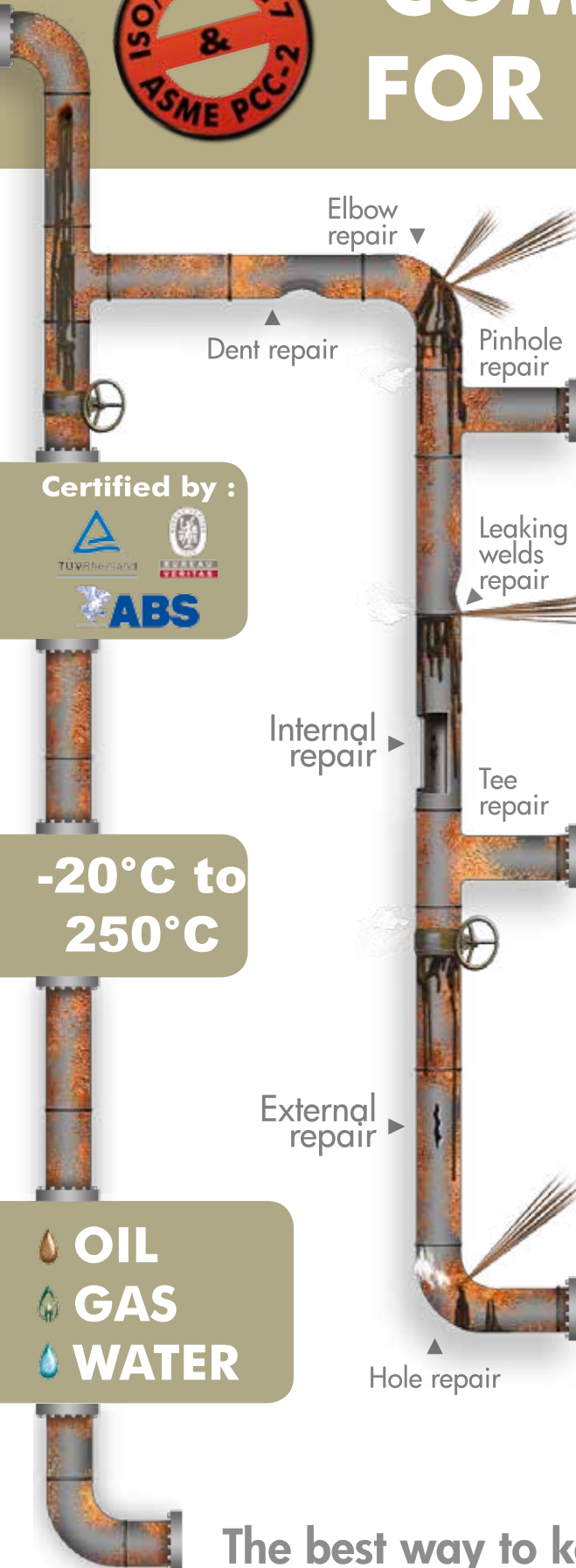
**Pipeline repair and maintenance products
for faster, safer, easier repairs.**



**NACE compliant "10
Split+Sleeve**



COMPOSITE REPAIR FOR DAMAGED PIPE



Certified by :



**-20°C to
250°C**

**OIL
GAS
WATER**



Repair & Strengthening



Composite Wrap Solution



Onshore - Offshore - Subsea

The best way to keep your installation profitable

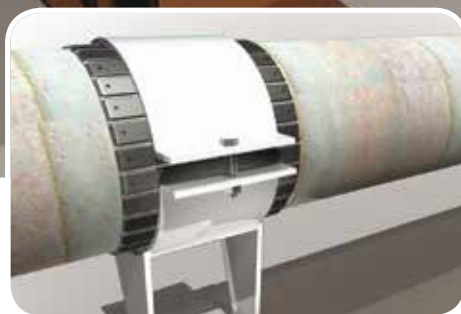
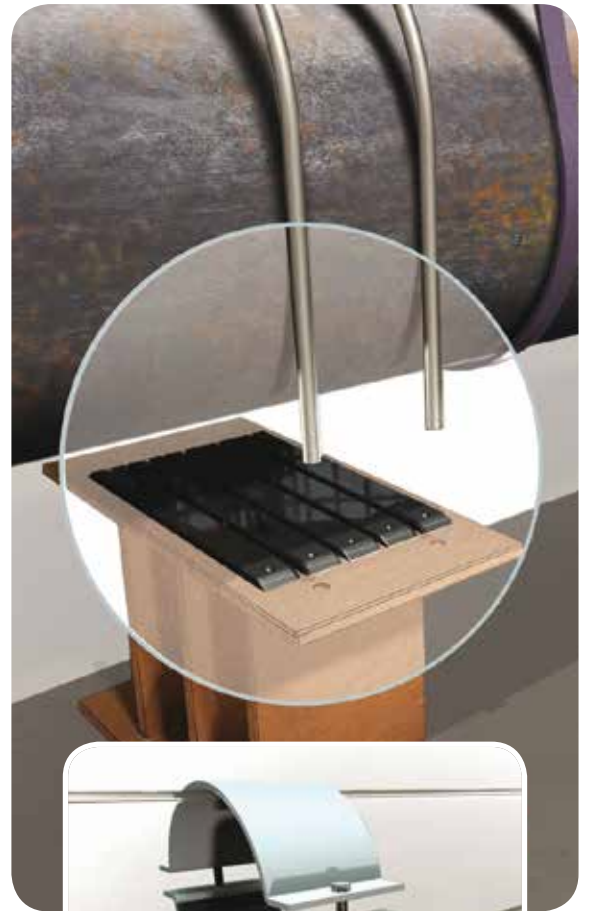
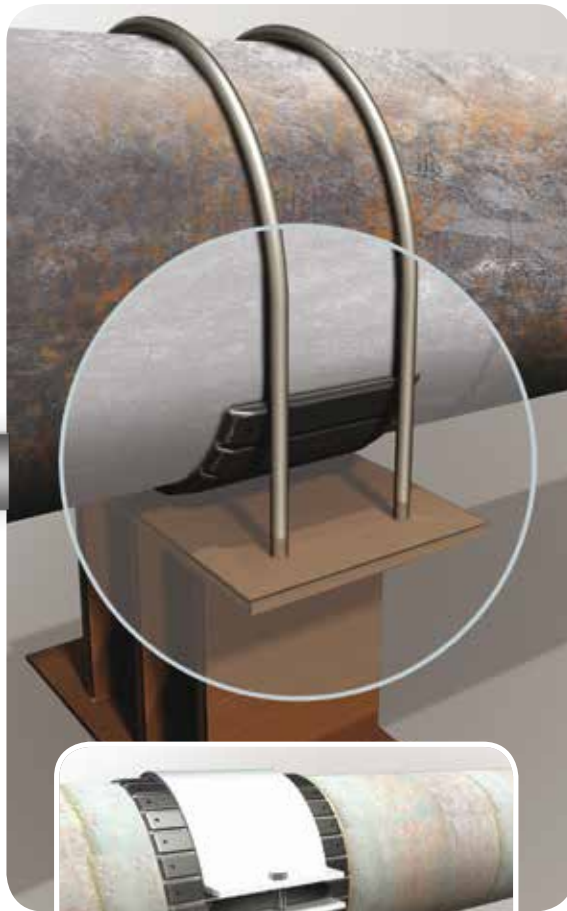
This composite technology reinforces your pipes which had lost up to 80% of their original wall thickness.



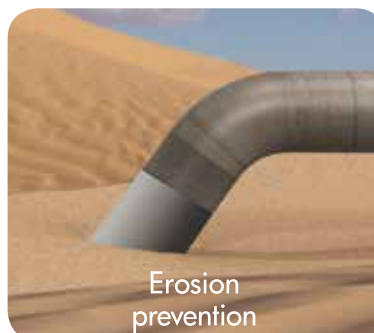
IMPLEMENTATION



PIPE & SUPPORT PROTECTION



Splash zones protection



Erosion prevention



Thermal insulation protection

The best way to keep your installation profitable



4" to 56"
-30°C to 150°C

has been engineered according to ASME B31.1. Pads are designed to support the pipe section weight as per the maximum span length.

What is it used for?

- Avoiding contact with trapped water on support
- Preventing from further corrosion on support
- Protecting pipe section at support area
- Avoiding galvanic effect / electric insulation
- Protecting from impact

Where to use it?

- All kind of pipe supports
- Wide range of pipe diameters
- Friction area
- Pippings, risers, sealines ...
- Onshore and offshore installations

Which are the benefits?

- Preventive and curative uses
- Long-term service lifetime
- Quick and easy installation
- Reliable integrity
- Non-metallic solution



The box includes 3 meters of pads, sets of resin, belts, pendulum, spatula.
A single kit allows 17 to 28 repairs according to pipe diameter

IMPLEMENTATION



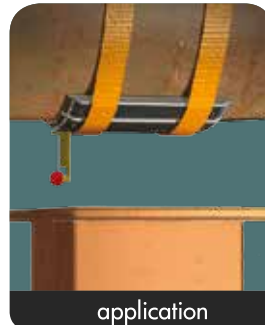
Pipe surface preparation



preparation



Resin application



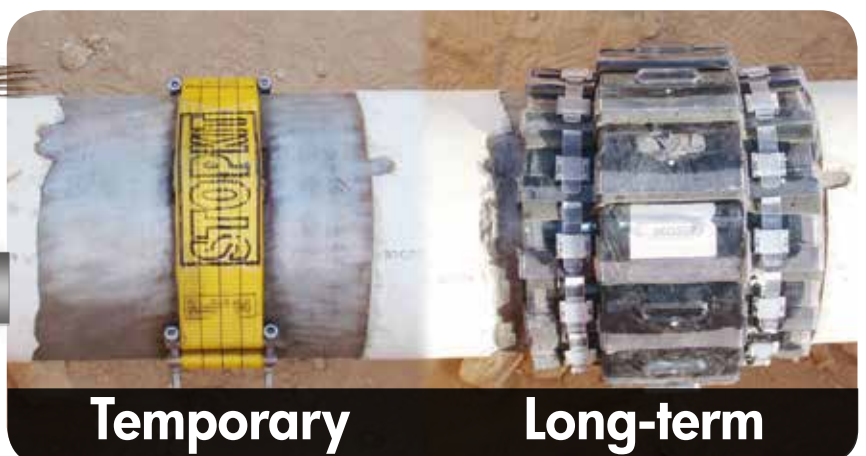
application



Pipe on support

	OL-28	OL-56	OS-28	OS-56
Application	ONSHORE		OFFSHORE	
Ø pipe: Applicable	from 4" to 28"	from 30" to 56"	from 4" to 28"	from 30" to 56"
Size of pad: Length / Width / Thickness (mm)	30 x 160 x 8	30 x 300 x 12	30 x 160 x 8	30 x 300 x 12
Length of the roll	3 meters / 86 pads	3 meters / 86 pads	3 meters / 86 pads	3 meters / 86 pads
Fiber pad support	Glass fiber	Glass fiber	Glass fiber	Glass fiber
Maximum temperature use	150°C	150°C	50°C	50°C
Pad nature	PPS GF40	PPS GF40	PPS GF40	PPS GF40
Density	1.65g/cm3	1.65g/cm3	1.65g/cm3	1.65g/cm3
Compressive resistance	150MPa/300MPa	150MPa/300MPa	150MPa/300MPa	150MPa/300MPa
Coefficient of friction (PPS/Steel)	0.16	0.16	0.16	0.16
Izod impact (notched)	45kJ/m ²	45kJ/m ²	45kJ/m ²	45kJ/m ²
Hardness Sh D	85	85	85	85
Dielectric Strength (kW/mm)	24	24	24	24
Flammability	V-0	V-0	V-0	V-0
Support	GF 2x2 TWILL	GF 2x2 TWILL	GF 2x2 TWILL	2x2 TWILL
Fabric weight	395 g/m2	395 g/m2	395 g/m2	395 g/m2
Resin characteristics	F3X8	F3X8	P3X32	P3X32
Density	1,6 g/cc	1,6 g/cc	1,55 g/cc	1,55 g/cc

ONLINE LEAK SEALING



The best way to keep your installation profitable

Onshore Offshore

Pin hole

STOPKIT 50 Temporary

Pin hole :
Ø ≤ 10mm & 80 bars
Pipe temperature
-20°C / +80°C

STOPKIT 50 Subsea

Pin hole :
Ø ≤ 10mm & 80 bars
Pipe temperature
+5°C / +80°C

STOPKIT 50 Long-term

Onshore / Offshore

Onshore Offshore

Big hole

STOPKIT 100 Temporary

Big hole :
Ø ≤ 50mm & 30 bars
Pipe temperature
-20°C / +80°C

STOPKIT 100 Subsea

Big hole :
Ø ≤ 50mm & 30 bars
Pipe temperature
+5°C / +80°C

STOPKIT 100 Long-term

Onshore / Offshore

Suitable for elbow

Suitable for welds

No stress on pipe

Suitable for ovalised pipe

Installation 5 minutes

Kit packaging

Light product

Green product

IMPLEMENTATION -

1

Install close to the leak

2

Slide above the leak

3

Center, keep the rubber patch over the leak

4

Tight until 40N/m

IMPLEMENTATION - STOPKIT Long-term

1

temporary

2

Prepare the surface

3

Encapsulate the STOPKIT®

4

Fill with the resin

5

Curing time : 30 minutes

Under pressure and on line flange leak sealing

-20°C
to +65°C



**Worldwide unique
NON-INVASIVE concept**

Others
Applications



The best way to keep your installation profitable

Which are the benefits ?

- Under pressure and on line installation
- Non-invasive
- None risk of resin intrusion into the flange
- Insulated and protected flange and bolts

What is it used for ?

- Repair leaking flange of SF6 under pressure and on line
- Approved by EDF (France) & EPRI (USA)

Where to use it ?

- Can be adapted to different type of flange, for example :



Easy removable !

Its patented double shell system, protects flange and bolts, during resin injection or disassembly.



IMPLEMENTATION



Surface preparation



Leak sealing with soft cover application and valve



Sleeve installation



Resin injection



Valve plug setting up

Used and approved by:



Formwork properties

Flange diameter	Contact us	
Formwork material	ABS (MIVAK Cristal)	
Application temperature	+10 to +50°C	+50 to 122°F
Operating temperature	-20° to +65°C	-4° to 149°F

Resin properties

Denomination	PU	
Color	Black	
Density	1450kg/m3	
Hardness Shore D ISO 868 (or ASTM D2583)	87	
Tensile (ASTM D3039)	57 MPa	8265 psi
Modulus ISO 527 (ou ASTM D3039)	4,2 GPa	609 kpsi
Curing time at 23°C/73°F	6 hours maximum	
Storage	between +15°C(+59°F) and +25°C(+90°F)	
Shelf life	12 months in original packaging	

Inspection, Repair, Maintenance (“IRM”)



Underwater IRM for pipelines, platforms and other facilities

- ✓ Structural integrity - Visual Inspection, MPI/ACFM, UT, CP
- ✓ Repair / strengthening sleeves on pipelines and structures
- ✓ Pipeline stabilization, free span correction
- ✓ Pipeline / Riser sectional replacements using connectors and spools
- ✓ Debris and seabed scour recovery
- ✓ Anode and sled installation



Grout Sleeves Installation



Grouting Sleeve™ is a stainless steel expandable sleeve used for trenchless structural spot repair of subsea pipes.

Anode Skid Installation



Anodes are used to protect a fitting from corrosion and are attached directly to the fitting. Anodes have an average life of 20 years.

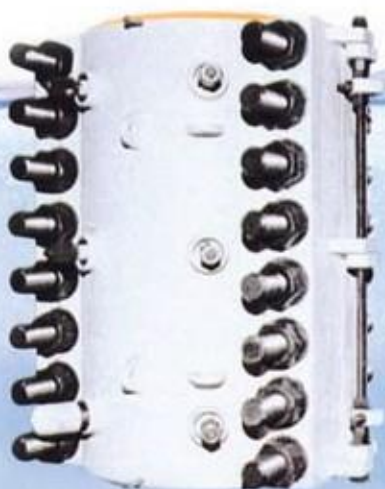
OFFERS OFF-SHORE TECHNOLOGY FOR YOUR REPAIR NEEDS

The Pipe Line Development Company (IOS) pioneered wet technology using mechanical fittings for the repair and maintenance of subsea pipelines worldwide. IOS fittings are designed for fast, simple installation and take less time than conventional weld-on types of fittings. They are used to seal pipeline leaks, reinforce thin or weakened pipe walls and make subsea tie-ins to existing pipelines at depths suitable for diving. Repairs can be made safely without shut down or with minimum downtime which

avoids costly production losses. Fittings can be welded if specified.

IOS has a broad line that gives you the widest choice of fittings for your application. Many standard fittings are stocked and available for emergency delivery. Custom designed fittings are developed and manufactured on site based on specific customer needs and can be processed on an emergency basis if necessary.

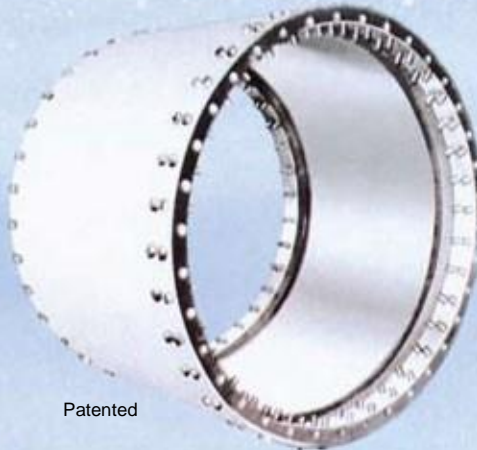
IOS is a world leader in pipeline repair



30" x 71" Split+Sleeve with hinges
designed for 3000 psig working pressure.

Patented

48" Weld+Ends® Coupling with 36" sealing area
between packing rings and double row of clamping screws.



Patented



30" 900# Flange Repair Split+Sleeve
designed for 1440 psig working pressure.

Patented

Riser Type Weld+Ends® Coupling
simplifies replacement of risers.



Smith+Clamp repairs
pit-hole leaks. It is easily installed
even when visibility is limited.



Patented

and maintenance, serving the industry for over 60 years. IOS fittings have been used for virtually every type of application around the world. Our long established guarantee is your assurance of a quality product.

Off-Shore Fitting Options

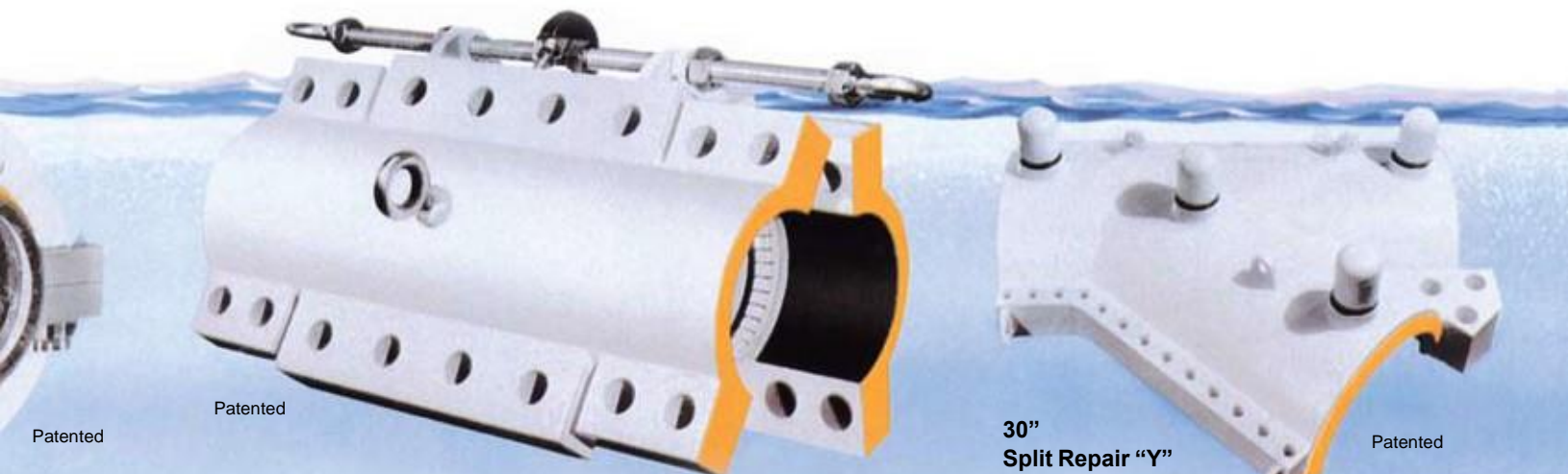
Marine Epoxy Paint is used for corrosion protection of the steel fittings. White is the standard color to make it more visible for divers. Other corrosion protection paint options are available.

Hinges are recommended for ease of installation.

Vents are used to force water out of the annulus area between the sleeve and the pipe. They are also used to vent the product while installing a sleeve on a live pipeline and to inject sealant if necessary.

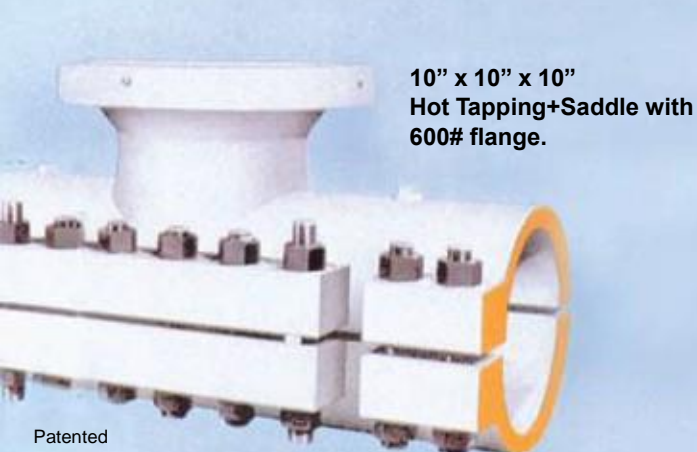
Plated studs and nuts provide maximum corrosion resistance in harsh environments.

Special Storage Protection is available upon request.

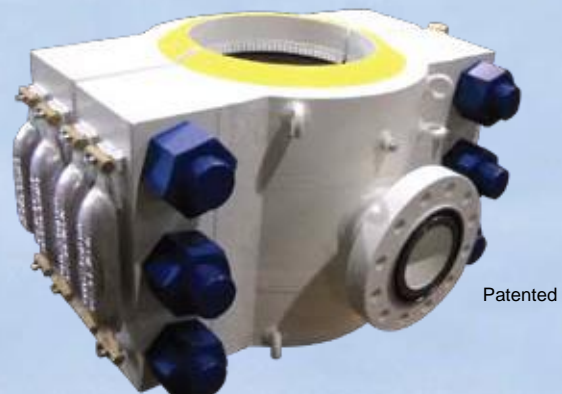


Clamp+Sleeve for coupling or repairing badly damaged pipe. Packing assures a positive seal and clamping surfaces grip the outside pipe wall to counteract end-pull and axial stresses.

30"
Split Repair "Y"
Oversleeve designed
for 330 psig working
pressure.

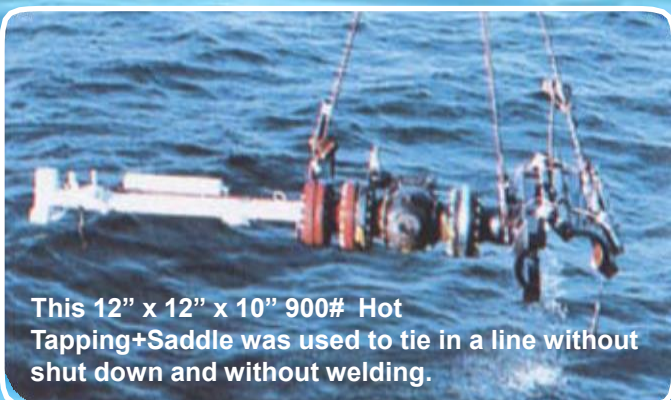


10" x 10" x 10"
Hot Tapping+Saddle with
600# flange.



18"x18"x6" 900# Hot Tapping+Saddle. Fitting includes hinges, marine epoxy coating, xylan coated studs & nuts, vents, and sacrificial anodes.

Fittings save time and money.



This 12" x 12" x 10" 900# Hot Tapping+Saddle was used to tie in a line without shut down and without welding.



6" x 60" 3000 psig Split+Sleeve.



Two 32" Weld+Ends®.



10" x 60" 3000 psig NACE compliant Split+Sleeve.



8" x 30" Split+Sleeve returned to to be reconditioned.



8" x 30" Split+Sleeve, from the above picture, after being reconditioned.