

Intervention and Stimulation Equipment





We bring together engineering, manufacturing and service expertise to deliver field-proven solutions that help you control costs, increase service value and achieve success.

We understand that uptime is imperative to your success. We partner with you to address your operational challenges and apply extensive research, testing, state-of-the-art engineering and manufacturing to deliver the field proven equipment and performance you demand.

It isn't often that you find everything you are looking for in one place. At the Intervention and Stimulation Equipment (ISE) business unit of NOV, we combine years of expertise with trusted brand names to deliver complete solutions that maximize efficiency, improve your service value and increase your bottom line. From customized equipment packages to 24/7 engineering support and aftermarket services, we're your single source solution.

Our family of field-proven products and 24/7 global service will keep your operations running at maximum efficiency day and night— around the world.



APPCO

As the worldwide leader in the design, manufacture and service of premium frac-sanders, multi-sanders and high-volume storage tanks, our facilities, equipment and service expertise stand ready to deliver. From preliminary concept to final design and from fabrication and installation to field service, we are your full-service supplier.

Enerflow

With a long history of manufacturing oilfield service equipment and controls, we have continued to strengthen our position as a leading developer of pressure pumping, blending and cementing equipment. When control is critical, you can rely on our team to deliver the right combination of products and services to get your job done safely and efficiently.

Pressure Performance Systems (PPS)

From pressure pumping systems and pumping expendables to well testing and flowline equipment, you can rely on us to deliver quality products that exceed your highest expectations. From the pumper to the wellhead, we offer comprehensive well service solutions backed by field proven performance, a strong global support network and unmatched customer service.

Rolligon

We manufacture and service a complete line of well stimulation products including skid, truck and trailer mounted units designed for high performance fracturing operations worldwide. Our Rolligon refurbishment facility also offers everything for your existing equipment, from control retro-fits to complete unit rebuilds. Count on us for delivering the right equipment for ground-breaking results on your next frac job.

CTES

We provide leading-edge coiled tubing hardware and software that will drive success during your next operation. Our wide range of products include coiled tubing monitoring devices, data acquisition systems and modeling software. With a worldwide network and technology that is ever changing, we look forward to helping you make informed decisions on your next job.

Devin

We're your go-to company for difficult-to-find tools, such as coiled tubing lift frames and support structures. With a long history of providing specialty rental components, support structures and motion compensation equipment, our team is here to help you get the job done safely, efficiently and cost-effectively. Onshore and offshore, we integrate solutions to pro-actively solve your special equipment challenges.

Hydra Rig

Over the last 30 years, we have become the leading manufacturer of coiled tubing, nitrogen and snubbing equipment by listening to our customers and providing solutions that get the job done efficiently. We are constantly pushing our standards higher to increase the value of both our equipment and services to deliver some of the most powerful and dependable equipment packages in the world.

Quality Tubing

Our developments in the welding, manufacturing and testing of continuously-milled tubing results in the highest quality product created to your exact specifications. We deliver product on time that represents the utmost standard of workmanship and value to you. With partners all over the world, we're in the process of expanding our service center network to meet your global needs and get you back into the field in no time.

Texas Oil Tools

When the pressure is on, our job is to help you control it. We are a licensed API manufacturer and a leading specialty supplier of pressure control equipment that adheres to the most stringent design and safety standards. We also offer state-of-the-art service and repair facilities for everything from simple redress to full recertification. New or restored, we have the capabilities you need to help control your operations.

Elmar

With trusted technologies such as Elmar, DynaWinch™, Artex™ and ASEP™ equipment, we offer a wide range of products, aftermarket services and support to meet all your wireline demands. From the winch unit to pressure control and wireline tools, we provide the complete package you need to perform operations as efficiently as possible.

Aftermarket

To ensure your assets continue operating at full, profitable capacity, we also refurbish, rebuild and recertify equipment back to original manufacturer specifications — no matter who built it. Our complete portfolio of OEM spare parts allows you to avoid third party replacement risks and extend the lifecycle of your equipment.

Integrated pressure pumping solutions

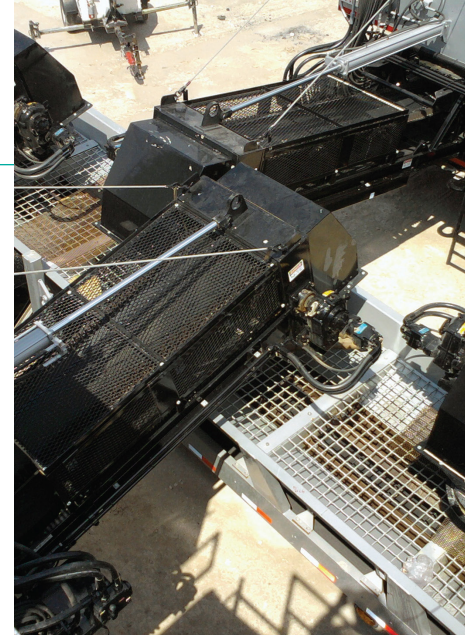


Delivering premium frac-sanders, multi-sanders and high-volume storage tanks for over 50 years.

We are a world wide leader in the design, manufacture and service of a superior line of oil and gas industry equipment. We specialize in the manufacture of premium frac-sanders, multi-sanders and high-volume storage tanks. We have a solid reputation as a supplier of quality products and services. For over 50 years we have been committed to first-class customer service. We guarantee quality and value to our customers from preliminary concept to final design and from fabrication and installation to field service. Our facilities, equipment, expertise and commitment make us your full-service supplier.

For today's fracturing applications, we supply various proppant handling solutions for the transportation and deployment of proppant for frac operations. From rail to the wellbore, we have a product to move your bulk proppant.

Since 1955, we have specialized in your high volume proppant and bulk aggregate storage equipment. With our long history, we are known to build equipment to last while reducing long-term cost and maintaining high efficiency.



Frac-sanders

Our frac-sanders are multi-compartmental proppant storage systems that allow proppant to discharge through multiple gates onto a hydraulically driven belt conveyor that deliver it to the multi-sander or directly into the receiving hopper of the blender. Compartments allow for segregation of proppant type and efficient bin feed to blender.

Multi-sanders

Our multi-sanders are utilized on large proppant frac jobs to accommodate discharge from up to eight frac-sanders. The hydraulically driven gathering belt is a unique design that uses a conveyor belt with a flexible high, vertical sidewall with steep climber cleats. This provides a compartmented belt system that allows for the high angle discharge of materials into the double discharge chute system.

Mini frac-sanders

For remote sites or small jobs, our mini frac-sanders are designed to transport and deliver proppant at the job site.

Mobile unloading belt conveyors

We manufacture the FSU-24 mobile unloading belt conveyors for the removal of excess proppant in the frac-sander with unload capabilities of approximately 125 to 150 TPH of material.

E-tanks

Our e-tanks are designed to provide portable storage of frac sand and other oilfield/aggregate materials with easily movable and erectable configurations. These units may be filled by a single conveyor system from either railcars or pneumatic trucks.

High volume proppant/aggregate storage silos

Our high volume storage silos are designed for the massive storage and load out of your frac sand and other oilfield/aggregate materials. Terminals are available in varying sizes and configurations with the capability to hold up to five million pounds of sand.

Mobile railcar unloaders

We design and manufacture MRU-24 mobile railcar unloaders to enable the unloading of proppant from bottom drop railcars directly in pneumatic trailers for transport or storage.

Bucket elevator and conveyor belt systems

We have systems available if you are looking for a solution to move high volumes of proppant/aggregate materials. With a wide array of options, we can provide all or part of your proppant/aggregate transfer system.

Proppant/aggregate terminal configurations

With the increased requirement for quick turnarounds on proppant/aggregate to the jobsite, we have terminal configurations to meet your needs. Whether it is rail car or semi-truck bulk loading/unloading, we can provide a solution built to last.

Pumping performance scaled to your operation.

The key to a successful fracturing operation is using equipment that is built for reliability, performance and longevity. Backed by decades of experience, our integrated offerings allow us to design and manufacture a comprehensive suite of fracturing service equipment. From a single unit to a complete fracturing spread, we can customize a solution to fit your needs.

Blenders

Our blenders are designed to meet the requirements of a vast array of jobs ranging from low rate gel fracs to high rate slick water jobs without modification. Units are manufactured to be easy to operate and maintain while delivering the most reliable operation, precise automated control and wide range of operating flow rates.

Liquid additive systems

When fracturing applications require extensive use of chemicals, LAS units can be used to relieve significant burden from the blender operator. Our units feature the ability to carry a wide variety of chemicals to handle complex well treatment requirements.

Frac pumps

The frac pump units we manufacture are designed to meet the harsh demands of today's large shale fracturing jobs. The fully engineered units are easy to operate and maintain therefore increasing useful life and return on investment.

Hydrations

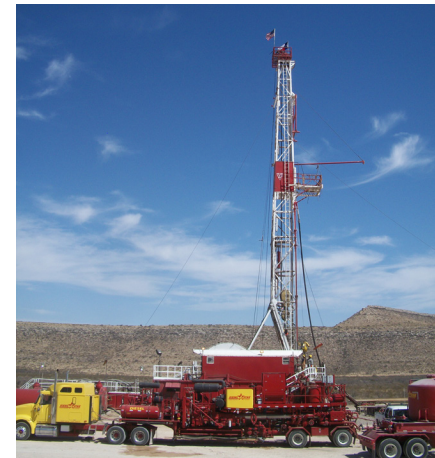
Our hydration systems reduce the amount of gel and chemical used during a job by allowing for "on-the-fly" hydration of fracturing fluids. Compared to pre-gel operations, hydration units significantly reduce job site expenses by eliminating time to pre-gel and costly disposal/clean-up of unused gelled frac fluids.

Data vans and unit control centers

We manufacture custom data vans and trailers for the monitoring and control of a complete spread of fracturing, acidizing, pump down and cementing equipment. Our designs provide a comfortable, centralized control room environment for your operations and customer.

Data vans and unit control centers

Combination fracturing blender units have long been used to service low production fields where stimulation jobs are small and require an economical solution. We manufacture units to feature the pumping horsepower of a small frac unit combined with the capabilities of a small blender on one chassis. The units can also be designed to provide frac slurry to additional pumpers to meet larger job requirements.



When the pressure is on, our only job is to help you control it.



Cementing equipment

Whether you are looking for a basic unit for plug and abandonment, long string horizontal casing or offshore high horsepower, we manufacture units to meet your cementing requirements. Our units provide precise management of the cement mixing and pumping process to ensure successful completion.

We offer the following cementing units:

- Batch mix units
- Cement pumpers
- Combo cementer/acidizers
- Automatic mixing systems
- High volume air compressors
- Cement bulk transport

Capillary tubing unit

Maximize well production with our capillary tubing units. Units are engineered for precise placement of capillary string to reliably increase well productivity by treating paraffin, corrosion, scale build-up and produced water via foam-lift.

Our capillary units offer simple, reliable operation with a number of custom options available. Units feature a patented powered sheave style injector head that has the choice for two different pull ratings and two sizes of tubing capacities.

Acidizing equipment

When formations require high volume acid treatments, having the right equipment is crucial to success. In order to meet your needs, we offer multiple acid units for pumping and transporting inhibited acids.

We offer the following acid pumps:

- Conventional acid pump
- Acid frac pump
- Acid kill pump

Coiled tubing support equipment

We manufacture a complete line of fluid pumping designs which can be used in coiled tubing services. Whether you are performing clean outs, reverse circulation, fluid swab-out, well kill, pressure control, pressure testing, stimulation or cementing we can meet your needs. We have concentrated on developing practical pumping unit designs that accommodate the demands put on today's well servicing companies.

Our standard coiled tubing support pump incorporates a two c-pump design for redundant fill/boost pump operation.

Complementary equipment

We understand the importance of providing solutions for industries surrounding the stimulation equipment industry. With our line of complementary products, we can support all aspects of your operation.

We offer the following:

- Software solutions
- Pigging pump

Well completions and production is at the heart of what we do. We meet our customers needs together with our integration into well stimulation and intervention. At PPS our products are manufactured with the latest design and technology needed coupled with our dedication to safety, we aim to service the global upstream oil and gas industry and have been doing so since 1955.

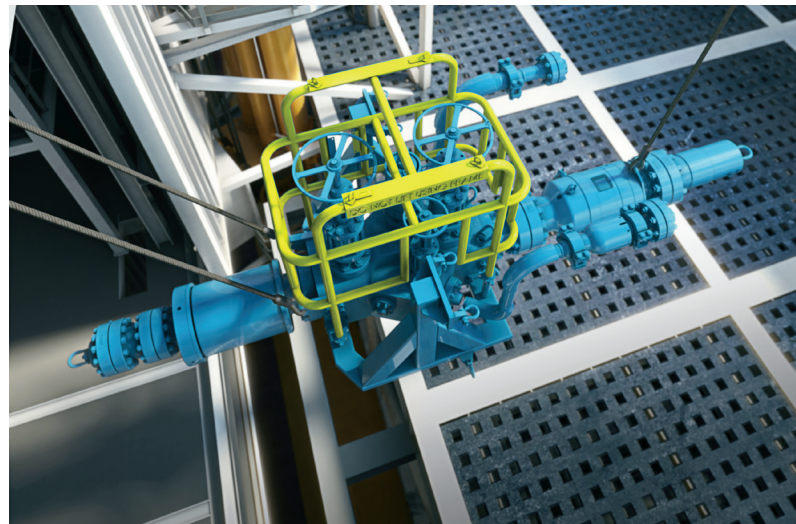
From concept to completion, we deliver best in class solutions through alignment with our customers. Our end products are the result of extensive research and testing, state of the art engineering and field proven performance.

Our products and after market services are aimed at meeting our customers' needs in-market with a more focused approach in the categories of:

- Pressure pumping
- Exploration and production
- Workover
- Well testing and flowback
- Well intervention

Pressure Pumping

From the beginning, we have worked with our customers around the globe to help them achieve their goals when operating our pressure pumping equipment. Our portfolio has steadily grown to include everything from the pumping unit all the way to the wellhead. We supply well service pumps, fluid ends and expendables; centrifugal pumps and spares; high pressure flow iron; missile trailers; zipper manifolds and frac trees. We also offer repair and recertification services for many of our and our competitors' products, including full asset management solutions.



Industry leading coiled tubing solutions



Well Testing and Flowback

Early testing of the well is critical for understanding the reservoir's characteristics to improve well performance and ensure ROI. Building on our existing high-performing products including surface test trees, choke manifolds, ESD valves, control systems and temporary pipework, we can now supply a complete suite of equipment for surface well testing for upstream pressures up to and including 20,000 psi. This suite of equipment includes sand management, heat transfer, separation and storage vessels, both on land and offshore. Our equipment can be supplied on individual, unitized skids or packaged in ISO containerized or trailer-mounted units to suit customer requirements. Our well test offering allows us to supply the full range of equipment for a complete surface well test solution.

Flowback is normally required after hydraulic fracturing and before conventional well testing as an initial means of removing debris resulting from the frac job. We produce the required suite of equipment required for post-frac flowback for operating pressures up to 15,000 psi including the debris catcher manifold for large particle removal, separation equipment, temporary pipework and choke manifold for pressure and flow velocity control.

Exploration & Production (E&P)

With continuous engineering advancements and our growing staff of proven field service personnel, we have the products and services you need to get to first oil or gas faster, safer and more efficiently. We have a full spectrum of surface wellhead equipment, christmas trees, surface safety products and chokes. We also have a large and growing rental fleet of frac trees, zipper frac manifolds and flowback equipment.

Workover

Most activities after the original well is drilled are considered part of the workover process and as assets begin to decline, these activities become critical to return a well to profitability. From major intervention to light remedial work, we are there with you every step of the way. We have a full line of reciprocating and centrifugal pumps to meet your pressure and flow requirements, industry-leading replaceable dies and inserts for handling tools, high-pressure flowline equipment, manifolds and much more.

Well Intervention

Well intervention activities are typically aimed at extending or ending a well's productive life and can include pumping, slickline, coiled tubing, snubbing and decommissioning work. In this area, we supply well control equipment including surface flow trees with dynamic string swivels, flow control manifolds and flowline equipment to compliment NOV's workover, coil tubing, snubbing, wireline and slickline equipment.



Helping you make informed decisions by providing leading-edge coiled tubing hardware and software

We understand knowledge is key when planning and performing productive well intervention and stimulation operations. Through innovation and dedicated specialists, we've developed the most trusted coiled tubing monitoring devices, data acquisition systems and modeling software.

For more than 20 years, we've partnered with our customers to serve the needs of a challenging and growing industry. Our innovative solutions deliver the safety and reliability necessary for your success. With a global market presence, we provide the technical expertise, equipment and operational support to increase efficiency and profitability of your business.

Our products

- Data acquisition systems (ORION) and specialized monitoring sensors
- Modeling software (CERBERUS) for intervention, drilling and completions
- Engineered products
- Engineering consulting services

Orion™ for coiled tubing

Designed to facilitate the distribution of information critical to an operation's success, the Orion V data acquisition system (DAS) provides easy-to-view diagnostics, a small footprint and seamless interfacing with the industry's leading modeling software, Cerberus™ for coiled tubing.

Monitors and records channels such as:

Those from the CT unit:

- Wellhead pressure
- Circulating pressure
- Pipe heavy/pipe light
- Tubing or pipe speed and depth
- Via OrionNET data acquisition software: CT fatigue life, forces acting upon the CT (Cerberus software required)

Those from the fluid pumper:

- Roadside and curbside flow rates and volume
- Via OrionNET data acquisition software: Total combined flow rate/volume

Argus TubeSpec™

The Argus TubeSpec uses twelve ultrasonic probes to provide continuous diameter and ovality measurements in the field.

The TubeSpec uses a polyurethane element as a medium between the sensor and the coiled tubing. This eliminates the traditional need (in Ultrasonic Transducers) for water coupling. The TubeSpec does not need calibration to measure wall thickness and is ATEX Zone II certified.

Depth measuring system (DMS)

The DMS provides a dual-wheeled design that incorporates slip-page detection and compensation (using Fastest Wheel Algorithm (FWA)). DMS significantly enhances accurate depth measurements in CT operations.

Coiled tubing diameter and ovality gauge (CT-DOG)

The CT-DOG is a real-time measuring device for detecting CT dimensional imperfections, such as necked or ballooned sections and dents. CT-DOG provides 100 percent tubing coverage at a speed of 100 ft/m or lower, with ± 0.002 " accuracy.

Coiled tubing cable installation system

Our coiled tubing cable installation system, or cable injector, pumps cable into and out of coiled tubing while it is still on the reel. The system greatly reduces costs when compared to vertical or horizontal installations. It also quickly installs cable without reducing the coiled tubing's fatigue life. The system is quick (up to 200 ft/min), has a small footprint (79" x 73") and a rugged, field-proven design.

Orion^{SL} LifeSaver™

This data acquisition system for slickline fatigue-life tracking acquires, records and displays slickline depth, tension, line speed and has one additional analog data channel. It provides real-time slickline fatigue calculations for estimating fatigue along the length of a slickline.

Weight indicator calibration system (WICS)

Use the WICS to periodically check all coiled tubing unit weight indicators to ensure they are accurate and working properly.

Zeta™ safety system

The ZETA Safety System provides an advanced job-design model and a real-time monitoring gauge for well intervention operations. Using a proprietary 3D finite element analysis (FEA) model in combination with highly accurate measurements from fiber optic gauges, the system enables accurate modeling of changing stress levels during the field operation.

Emergency stop system

An optional upgrade to the Orion DAS, the ESS uses a combination of electro-hydraulic control valves and pressure switches to stop the coiled tubing injector in the event of imminent coiled tubing failure.

Cerberus™ for coiled tubing

Cerberus for coiled tubing is the leading commercial modeling software for planning and performing coiled tubing operations. Running in the Windows® environment, Cerberus software provides state-of-the-art calculations for the following models:

Fatigue

Today's complex coiled tubing applications make it critical to track fatigue life and diameter growth to avoid an expensive and potentially dangerous failure at the wellsite. Achilles™ is the most advanced model of its kind, using sophisticated plasticity and damage algorithms calibrated and validated against hundreds of full-scale and laboratory tests and proven in the field to be accurate.

Forces

The Orpheus tubing forces model calculates the cumulative forces acting on the Coiled tubing, taking into account effects such as drag, helical buckling and hydraulics effects, in order to determine the feasibility of the job and to anticipate possible problems with lock-up or pipe yield.

The Orpheus tubing forces model can model multi-component tool strings (BHAs) with features that include knuckle joints, centralizers and rollers. The Toolfit Wizard uses advancing modeling to help you design a tool string capable of navigating highly deviated wellbores or other obstacles you may have.

The Cerberus Hydra™ wellbore module provides a large number of tools to assist in the design of CT pumping operations. Options range from basic "snapshot" calculations, to more complex simulations where conditions change with time. Extensive use of wizards step users through the often complex process of choosing fluids and specifying volumes and flow rates, to design a successful workover or drilling program.

Limits

The Hercules™ tubing limits model calculates burst and collapse pressures, maximum safe axial tension and compression loading.

OrionNET™ for Data Acquisition

Use Diagnostic views and functions in OrionNET help you and our teams to easily identify issues encountered in acquisition from five data source types: Orion V, Orion IV, ASCII via Serial, Derived Channels and WITS0. The Show Diagnostics button is always visible in the lower left-hand corner of the OrionNET Viewer display screen. The button flashes red when an error occurs during channel data acquisition. Clicking the red button reveals a related diagnostics display.



As the industry evolves, we continue to integrate solutions to help solve the challenges you face.

We integrate solutions to proactively solve tomorrow's challenges today. We deliver specialty rental components, support structures and motion compensation equipment, and our highly trained service team will help you advance your operations both onshore and offshore.

We provide the proper equipment to accomplish your objectives and are the go-to company for difficult-to-find tools. We also have one of the largest inventories of elevator bails available to the Gulf of Mexico.

We are the industry's most trusted name in specialty equipment. Onshore or offshore, you can depend on our products and services to help you get the job done safely, efficiently and cost effectively.

Our products

- Bucking services
- Completion and intervention
- Land towers
- Lift frames
- Offshore towers
- Surface test tree
- Rental handling tools

Bucking services

Our bucking unit is a rugged, self-contained, continuously rotating unit designed to accurately make-up or break-out the threaded connections on tubular components. The unit will accurately make-up and break-out thread connections without damage to the thread. Adjustable extension beams with hydraulic rolling tool support jacks for headstock (10' long) and tailstock (20' long) eliminate the bending of tubular goods during makeup.

Continuously rotating 2 speed makeup/breakout unit equipped with self-centering hydraulic clamp cylinders that extend evenly to secure the work piece, from 7" to 21.50" diameter. The unit has a makeup/breakout rating of 105,000 ft lbs with a two speed drive train.

Land and offshore towers

We provide a safe means of hoisting and supporting surface equipment required for rigless completion and well intervention operations - on and offshore. Our towers are solutions-based and increase efficiency and mitigate risk. Multiple onshore options are available complete with Mini Track™ vertical and horizontal injector head positioning system; all at a stackable to project specific height. Multiple offshore configurations are available complete with the Motion Buster™ compensation system, Gimble Table™ and Track Stack vertical and horizontal injector head positioning system.

Land towers

- Beam and skidding packages
- Mobile track stack
- Track stack

Offshore towers

- Track stack
- Motion buster
- Dual winch system
- Devin Inline Motion Eliminator (DIME)
- Dual dime
- Beam and skidding packages

Rental handling tools

Our dedication to quality and continued research and development, along with strong after-sales support, have built us a reputation for providing industry leading equipment to not only meet but exceed our customers' needs.

- 15,000psi (103.42 Million Pa) Lower Kelly Valves
- Adapters - Double Studded
- Coiled Tubing Injector Head Stands
- Guides - Stabbing
- Reducing Bushings
- Safety Valves (TIW)
- Slips - Casing, Drill Collar, Rotary
- Spiders
- Subs - Pump In
- Elevators

Surface test tree

Keeping your crew safe on the rig can be quite a challenge, but our surface test tree can make it easier and is much lighter. While traditional surface test trees weigh over 25,000lbs (11,340kgs), Devin's weighs as little as 9,500 lbs (4,309 kgs), making it a streamlined solution for all well intervention applications. Our surface test tree has I.D. ranges of 3" to 6.5" (7.62 cm to 16.51 cm) and an operating pressure of 15,000 psi (703 kg/cm). Its smaller size allows for faster and safer rig-up, which means reduced rig time and lower operational costs. With rig costs increasing, potential savings from this single piece of equipment are recognized. For safety and efficiency, our revolutionary surface test tree is by far the industry's best.

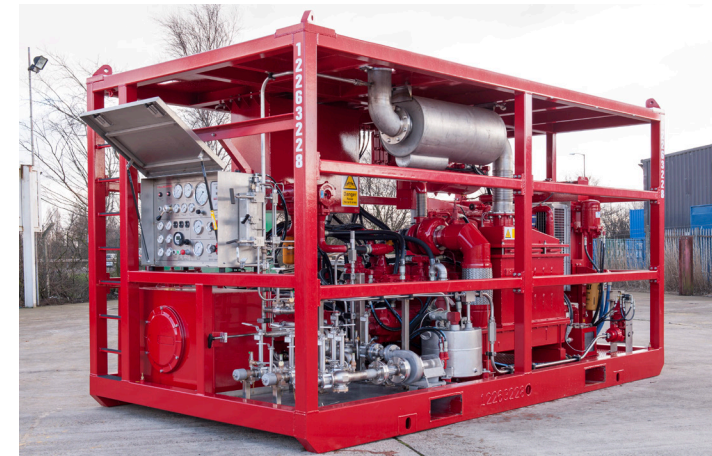
Lift frames

We offer a variety of lift frame assemblies to support your coiled tubing, wireline and slickline operations. Providing a work window between the top drive and completion landing string, for deployment, well intervention and plug and abandonment. Our assemblies increase efficiencies in handling surface pressure control equipment, utilizing a strategically placed well center hoist, all while supporting string weight.

- Coil tubing lift frame
- Compensated service and maintenance
- Bail assembly spreader system
- Transfer bail assembly spreader system



Hydra Rig



World's leading manufacturer of coiled tubing, nitrogen and snubbing equipment.

Based in Fort Worth, Texas Hydra Rig products and services are recognized worldwide for quality and performance. Today we have manufacturing facilities in the USA, UK, Canada, Belarus and Singapore as well as sales and service centers in the USA, Beijing, UK and Dubai. No other manufacturer can match our commitment to customer service.

With over 1,300 coiled tubing units, 1,500 nitrogen units and 200 snubbing units currently in use worldwide, our equipment meets the demand for rugged, dependable operation from the Tropics to the Arctic. Our dedication to quality and continued research and development, along with strong after-sales support, have kept Hydra Rig in this leadership position for over 42 years.

Our products

- Coiled tubing drilling equipment
- Injectors
- Reels
- Coiled tubing units
- Nitrogen equipment
- Snubbing equipment

Coiled tubing unit

We design and manufacture a variety of coiled tubing units for land and offshore applications. Our units are tailor-made allowing our customers a variety of configurations to adapt to the demanding requirements of today's diverse oilfields and highway restrictions around the world.

From the North Sea to the North slope of Alaska, in the Persian Gulf or the Gulf of Mexico, Hydra Rig coiled tubing units have consistently built a reputation among coiled tubing operators to be the smoothest operating, most powerful and dependable units ever built. For each build, our dedicated engineering team will work with you to customize each unit's configuration for every job-site.

Unit options

- Compact units
- Mast units
- Mini units
- Skid mounted
- Truck mounted
- Trailer mounted

Coiled tubing drilling (CTD)

Fast rig-up and shorter trip times make CTD cost effective and generally results in higher production rates than conventional overbalanced drilling techniques. We specialize in both conventional coiled tubing equipment that has been modified for coiled tubing re-entry drilling applications, as well as complete purpose built turnkey drilling systems.

Injectors

Engineered and designed for rugged reliability and reduced maintenance, our injectors are backed by the experience achieved from the manufacture of over 2,000 injectors. Whether you are buying a complete new unit, or are replacing the injector on your existing unit, our injectors have the performance and dependability that is demanded by your customers in today's toughest oilfield conditions around the world.

Reels

Our reels are designed to optimize tubing capacity in the smallest possible envelope dimensions. With today's demands for longer, heavier, larger diameter tubing, a full range of reels are supplied and built to fit your applications. Features that include chain or direct drive, clear through bore swivels designed specifically for coiled tubing use and hinged to open counters make our reels the preference of experienced operators.

Snubbing unit

Our snubbing units are designed to meet your snubbing and hydraulic workover requirements. Custom packages built to your specifications are available with a full line of auxiliary components such as work windows up to 600,00 lbs capacity, high pressure circulating swivels up to 15,000 psi operating pressure and skid mounted mud pump packages. HRS 150 and 225 units are available in heli transportable models for remote operations. DNV and BP200 certification is available.

Stelkraft

To expand our offerings we now offer a wide range of customized Stelkraft products from our Singapore manufacturing facility. The products are supported globally by Hydra Rig's sales and after sales group and by our global service centers. Since 1988 we've built a reputation as the pioneer of manufacturing improved and innovated coil tubing equipment and accessories in Asia Pacific. With the ISO 9001 certification to our name, it can be assured that all equipment is manufactured by our skilled and qualified engineers, fabricators and welders and tested to oilfield standard requirements.

Stelkraft products

- Clip in drum CT frame
- CT lift frame
- CT power reel
- Injector basket
- Power pack
- Skid mounted pump
- Subsea high pressure hose reel
- Swivel head rotating joint
- Telescopic CT control cabin, injector jacking platform and spooler frame
- Walking system frame



Nitrogen pump

We manufacture a complete line of cryogenic pumps, cold ends, boost pumps, heat recovery vaporizer pots and fully automated fired high rate vaporizers which are used in every unit we make. Our nitrogen pumping systems will meet the toughest standards of oilfield performance.

Cryogenic nitrogen cold ends

Our Cryogenic cold ends are designed to mount on the Hydra Rig triplex pump power frame, as well as competitors'.

- From 1.25" to 3.25" diameter
- With working pressure up to 15,000 PSI
- D.N.V. approval available
- Cold end exchange program

Direct-fired nitrogen vaporizers

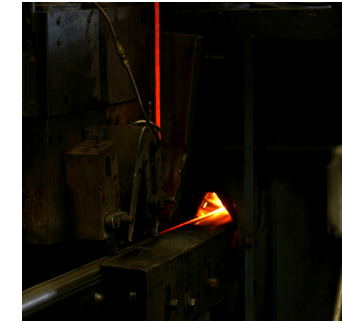
The compact design and exceptional performance has been the key to our direct-fired nitrogen vaporizer's market acceptance. The same technology is embodied in all of our direct fired vaporizers. This enabling us to apply new innovations across the product line, rather than being platform specific. Satisfies market requirements for vaporization rates up to 1,200,000 SCFH.

Nitrogen fluid pump combo unit

Our combination nitrogen and fluid pumping unit is designed to meet your specific demands when it comes to pumping both fluid and nitrogen, but not in extremely large volumes. Our combo units require only one piece of equipment be brought to do the job of pumping both nitrogen and fluid. The fluid side of the unit consists of an independent power unit, triplex fluid pump, 10 BBL tank, two centrifugal pumps and discharge manifolds. The nitrogen side of the unit consists of an independent power unit, liquid nitrogen storage tank, nitrogen boost pump, nitrogen triplex pump, water bath vaporizer and discharge manifolds. Both the nitrogen and fluid sides of the unit are controlled from a common, climate-controlled cabin located on the unit.

Industrial nitrogen systems

Our industrial nitrogen pump and vaporizer systems encompass a full range of units for service providers in the industrial cryogenic market. Vaporization options include heat recovery, steam, or direct fired. Our industrial nitrogen pumping units are designed specifically for the servicing of refineries, chemical plants and pipelines. Operating pressures of up to 10,000 PSI for leak testing and commissioning and high flow low pressure units for purging, blanketing and drying applications. Units can be both soundproof to 80 Db and Zone 2 certified.



Products and services that continue to lead the coiled tubing industry

Quality Tubing has been the leader in coiled tubing manufacturing processes over the past 40 years. Our developments in the welding, manufacturing and testing of continuously-milled tubing result in the highest quality product created to your exact specifications. We deliver product on time that represents the highest standard of workmanship and value to you.

We are more than just a manufacturer of coiled tubing - we are your partner through the entire process. We service the industry with our growing network of service centers, supporting your global operations. Our regional service centers are stocked with finished goods that are targeted at reducing downtime for your projects around the world.

We currently lead the coiled tubing industry in number of international service centers, with seven different locations. As an additional service, we have established five finished goods stocking points based on customer demand.

Quality Products

Depending on the application and operating environment, coiled tubing is manufactured in a variety of grades, wall thicknesses and diameters.

- Outer diameter: 0.75" - 3.5" (19.1 mm - 88.9 mm)
- Wall thickness: 0.087" - 0.25" (2.2 mm - 6.4 mm)

Work strings

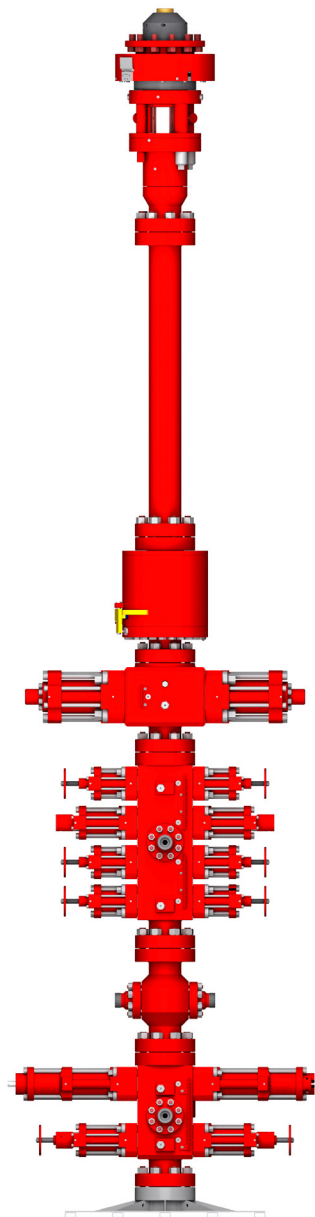
- QT-1300 (130K MYS)
- QT-1100 (110K MYS)
- QT-1000 (100K MYS)
- QT-900 (90K MYS)
- QT-800 (80K MYS)
- QT-700 (70K MYS)

Permanent installation strings

- HO-70
- QT-16 Cr

Leading specialty manufacturers and suppliers of pressure control equipment.

At NOV, we've come a long way in establishing ourselves as one of the leading specialty manufacturers and suppliers of pressure control equipment. While you respond to your industry challenges, we're working to develop new and more efficient solutions to your problems. We understand just how important uptime is to overall success. That's why we built a state-of-the-art service and repair facility that can get your equipment back into the field as quickly as possible. From simple redress to full recertification, our proven track record of excellence in design, manufacturing and service will help you keep your operations running at maximum efficiency, 24/7.



Regardless of how demanding your operations are, our coiled tubing pressure control equipment can meet your needs and leads the industry with a proven track record of innovation and performance - on the surface and subsea. We provide a variety of equipment used in the pressure control stack and can meet your needs by providing all the equipment needed from the wellhead to the injector head.

Our BOPs consist of different sizes, working pressures and configurations. The most common model, our ES Series, has hydraulic ram change, which improves safety when servicing your BOP.

Blowout Preventers

Our blowout preventers serve as well control devices used to prevent the uncontrolled release of wellbore fluids during coiled tubing operations. Each well control stack consists of a series of ram-type preventers designed to ensure pressure integrity and safety during coiled tubing operations. We offer a variety of BOPs to fit your well control requirements.

Quick Latches

Quick Latches are used as a means to connect equipment together without a person standing under a suspended load. The rig up would consist of installing the pressure control equipment onto the wellhead and then installing the injector head. The injector frame would have the Stripper Packer mounted into the frame with a quick latch profile pointing down. The quick latch mechanism can be latched remotely without operation personnel working to help connect the last connection.

- Hydraconn
- Injector Connection
- Hydraulic Releasing Connector (JHS)

Stripper Packer

The Stripper Packer is the main well bore barrier while the coiled tubing is snubbed into the well and stripped out of the well. The Stripper Packer seals around the coiled tubing and contains the well bore pressure. A variety of different models are available depending on the application and requirements.

Automated Control Systems (ACS)

Our ACS are used around the globe for wellhead surface and subsurface safety valve control in both onshore and offshore applications. We offer hydraulic power units along with high-pressure test racks for use in testing facilities. NOV Automated Control Systems has been providing these services for over 30 years to every major petroleum producing region of the world. Whether the control system is an extension of an existing unit or exists only as a conceptual project element, we are capable of providing the solution.

Subsea well intervention equipment

Our subsea products can help you save time and money during subsea well interventions.

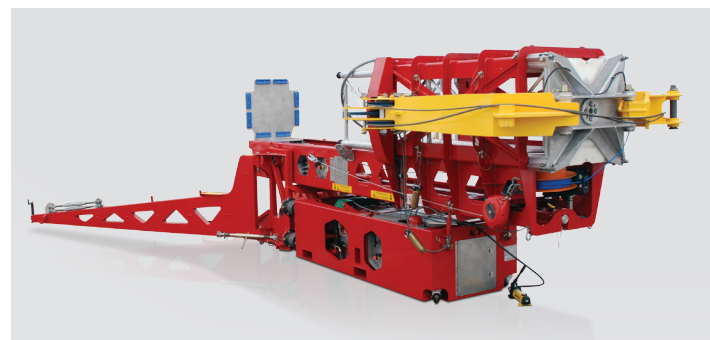
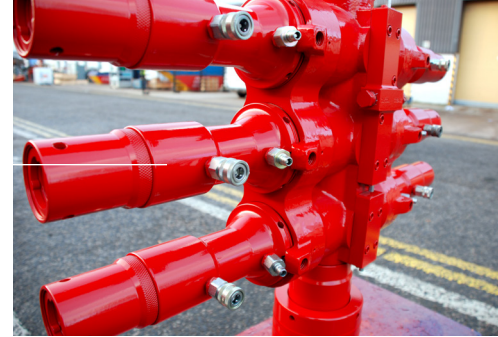
Our subsea systems have been used in major markets including the Gulf of Mexico, North Sea, West Africa and Southeast Asia. The main benefit of a system such as this is to provide an economical method for wireline well intervention in subsea wells. The biggest savings is that a smaller vessel can be used to perform this well Intervention.

Applications

- All riserless coiled tubing and wireline subsea well interventions
- Subsea (up to 10,000 feet in depth)
- Working pressure up to 15,000 psi
- -4°F to 300°F
- Explosive decompression resistant seals
- Currently developing subsea equipment to meet HPHT requirements

Creating the complete wireline solution





Our vision is to be globally recognized as the supplier of wireline equipment products, after sales support and training against which all others are measured.

DynaWinch

We offer a range of customized DynaWinch products from our Calgary, Canada manufacturing center. The products are supported globally by Elmar's sales and after sales group and by our dedicated Canadian service centers in Calgary and Edmonton. Products are assembled on both North American and European chassis and are built for either desert or extreme cold weather conditions.

DynaWinch products

- Custom designed logging and slickline trucks
- Swab rigs
- Combined mast and derrick units
- Integrated crane and winch units
- Extreme Arctic and desert environment units
- Specialized support vehicles and containers

Artex

Artex manufactures a range of wireline trucks at the Brenham, Texas facility. We take pride in our trucks which are custom built by experienced craftsmen to a very high standard of finish and they are supported by a dedicated after sales team based at Brenham and available to support all our customers' needs. Our units are thoroughly tested in our test well and with our service offering will last for many years.

Artex products

- Custom designed logging and slickline trucks
- Combined mast and derrick units
- Integrated crane and winch units
- Specialized support vehicles and containers

ASEP

We have been making high quality wireline equipment since 1981, of which much is still in use. Our customers can choose from a range of certification levels for their ASEP products including zone II, CE/ATEX and various DNV and EN standards. Our Automation Products group designs and manufactures the SmartMonitor and LineMinder control panels, as well as the technology behind our now field proven fully electric e-winch design.

ASEP products

- Skid mounted wireline units
- Truck mounted wireline units
- Combination winch and crane units
- Powerpacks
- Spooling units
- Accessories
- LineMinders and SmartMonitors

Offshore and truck mounted mast units

Elmar masts are reliable and safe. We offer a range of offshore and truck mounted masts from 35 ft to 95 ft and to suit all requirements, be they restricted lifting capability, reduced deck area or Zone I area usage. We recommend the mast operations training provided by our after sales team, which will ensure that your team can carry out a competent and efficient operation.

Mast products

- Slickline mast units
- Wireline mast units
- Truck mounted wireline mast units



WPCE products

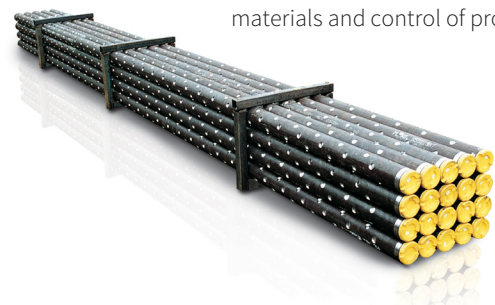
We manufacture pressure control equipment from 3,000 psi up to 30,000 psi working pressure, all of which has been subjected to a full design review and is available with a certification pack which can be downloaded at any time from our secure website. To ensure that your WPCE products remain fully certified and in top condition we offer a full range of OEM spares and hold significant stock levels globally.

- Electric line and slickline pressure control equipment
- Slick coated E-Line and large diameter cable pressure control equipment
- Wireline shear and seal valves - WSSV
- Accessories
- Horizontal tree isolation plugs

Wellhead control products

Elmar control units have been in manufacture since 1981. We supply a range of air, diesel and electric driven units for all environments and applications.

- Hydraulic control units
- Grease control units
- Combined grease and hydraulic control units
- Pressure testing workshops
- Test and injection units
- Subsea umbilical reelers
- Accessories



Wireline solutions

Elmar manufactures a wide range of slickline tools, to a very high quality standard. Our range is comprised of all standard conveyance tools and advanced tools such as power jars (hydraulic and spring), mechanical combination tools and mechanical tubing punch perforators.

The universal pulling tool is a field proven alternative to conventional pulling tools and reduces the amount of tools required in a toolbox, owing to its adjustable core length and the ability to change its mode of shearing. The brand new Roller Conveyance System (RCS) enables access to highly deviated well bores with its simple, robust design. Tools can be manufactured with QLS, HD or SR connections, or as an alternative with Elmar's high strength Breach Lock connection.

Flow control

We manufacture and supply a wide range of flow control items, for tubing sizes from 2 3/8" through to 7". The equipment can be custom designed to suit specific projects and is suitable for most well types including high value, high pressure subsea completions.

Tubular completion

We manufacture tubular completion equipment to your drawings and specifications. All tubular manufacture is subject to agreed and documented quality assurance processes and relevant certification and documentation is provided. Our three tubular product lines are Perforating Guns, Slotted and Holed Casing and Screen products.

Manufacturing of tubular perforating gun hardware

Elmar has been manufacturing perforating gun hardware and accessories since 1989 and currently has a total capacity of approximately 55,000 feet of production per month between the Dubai and Aberdeen plants. Where applicable, the guns meet requirements including API, NACE NPD and EEUMA and are certified by a Third Party certifying authority.

Holing and slotting of casing

Our slotted and holed liners are manufactured on specially designed multi-spindled machines that assure a high level of machining accuracy whilst maintaining metallurgical properties through the continuous application of coolant during the cutting process.

Manufacturing of screens

We have been producing wire wrapped screens under license since 1995 and has a capacity of 150 joints per week, with a range of base pipe sizes from 4" to 9 5/8".

Documents are maintained for customer assurance of full traceability of materials and control of procedures.

Aftermarket services





We understand that in today's challenging market, you are only as good as your next job.

Our family of field-proven products and global 24/7 service will keep your operations running at maximum efficiency day and night. We work in partnership with our customers to develop a solution designed to fit the size and requirements of any well intervention and stimulation operation.

Regardless of the original manufacturer, we refurbish, rebuild and recertify equipment back to original specifications to ensure your assets are operating at their full profitable potential. With a complete portfolio of OEM spare parts, you avoid third party replacement risks and extend the lifecycle of your equipment with service you can trust.

We understand that service expertise drives uptime that is critical for your operation. With over 100 locations worldwide, our global service network provides unmatched 24/7 customer service, on-time delivery and technical expertise that you can depend on.



Parts

The lifecycle of your equipment is important to us. To ensure your critical parts are on-hand when you need them, our **global facilities** are continuously replenishing inventory while providing **24/7 technical support**. With our deep knowledge of your processes, we will meet your demand like no other supplier.

At ISE, we provide genuine OEM-supplied parts that preserve the integrity of your asset. Made of the same high quality of the original equipment, our **100% OEM spare parts** are designed to fit your needs with every delivery. We offer a true collaboration that helps improve your jobsites performance, reliability and safety in no time.



Repair

To ensure you continue operating at maximum potential, we refurbish, rebuild and recertify equipment back to original manufacturer specifications – no matter who built it. Our complete portfolio of OEM spare parts eliminates third party replacement risks, while extending the lifecycle of your equipment. With over 100 locations worldwide, our **global repair network** provides unmatched customer service, **on-time delivery** and technical expertise that you can depend on. In every situation, you can rely on our **highly trained personnel** to assess, repair, test and return your assets back to service in no time.



Service

We understand your need for minimizing costly downtime. As your equipment moves into the field, we are standing by to support you with some of the best **customer service** in the industry. Our team of trusted **field service technicians** work onsite land or offshore around the clock to quickly resolve all of your issues, whether structural, mechanical, electrical, or software related. With our in-depth knowledge of all of your processes, we can ensure you get the quality technology you need to get the job done right.



Training

As part of our commitment to provide a safe and reliable workforce, we offer an array of **training programs** throughout the year covering all types of well intervention and stimulation equipment. Along with these scheduled courses, we partner with our customers to **integrate training packages and equipment** tailored to fit your needs.

Our programs are facilitated by industry leading experts at customer facilities, jobsite locations, or at any one of our 100+ global facilities. Whether you are looking to gain knowledge on your equipment's functionality or improve the safety of your operations, our goal is to ensure you leave the course with the confidence and skills to keep your jobsites running at maximum efficiency.

Pressure Pumping Locations

APPCO

USA – San Antonio, TX
Phone: 1 210 333 1111
Email: Pressure-Pumping-Group@nov.com

Enerflow

Canada – Alberta, Calgary
Phone: 1 403 648 6011
Email: Pressure-Pumping-Group@nov.com

Pressure Performance Solutions (PPS)

USA – Houston, TX
Phone: 1 281 372 7169
Email: MW-USA-PPSystemSales@nov.com

USA – Fort Worth, TX
Phone: 1 817 696 0800
Email: MW-USA-PPSystemSales@nov.com

Alberta – Canada
Phone: 1 780 801 1382
Email: MW-USA-PPSystemSales@nov.com

United Kingdom – Aberdeen
Phone: 44 0 1224 245518
Email: MW-USA-PPSystemSales@nov.com

UAE – Dubai
Phone: 911 50 559 9354
Email: MW-USA-PPSystemSales@nov.com

South America – Argentina
Phone: 5 4 9 299 4615182
Email: MW-USA-PPSystemSales@nov.com

South America – Bolivia
Phone: 5 4 9 299 4615182
Email: MW-USA-PPSystemSales@nov.com

South America – Chile
Phone: 54 9 11 2180 0129
Email: MW-USA-PPSystemSales@nov.com

South America – Brazil
Phone: 55 22 2796 9203
Email: MW-USA-PPSystemSales@nov.com

Asia – Singapore
Phone: +65 6602 4000
Email: DevinSales@nov.com

Rolligon

USA – Anderson, TX
Phone: 1 936 873 2600
Email: Pressure-Pumping-Group@nov.com

CT Equipment Locations

CTES

USA – Conroe, TX
Phone: 936 777 6200
Technical Support: 936 777 6200
Email: ctessales@nov.com

United Kingdom – Aberdeen
Phone: 44 1224 748797

Dubai – Middle East
Phone: 971 481 100100

Devin

USA – Lafayette, Louisiana
Phone: 337 233 3846
Email: DevinSales@nov.com

USA – Alice, TX
Phone: 361 396 1300
Email: DevinSales@nov.com

USA – Houston, TX
Phone: 713 375 3070
Email: DevinSales@nov.com

USA – Kilgore, TX
Phone: 903 986 1216
Email: DevinSales@nov.com

Asia – Singapore
Phone: +65 6602 4000
Email: DevinSales@nov.com

South America – Brazil
Phone: +65 9853 3369
Email: DevinSales@nov.com

Hydra Rig

USA – Ft. Worth, TX
Phone: 817 985 5000
Email: hrisesales@nov.com

USA – Duncan, Oklahoma
Nitrogen Division
Phone: 580 255 4433
Email: hrnsales@nov.com

USA – Odessa, TX
Phone: 936 588 9162
Email: hrisesales@nov.com

United Kingdom
Phone: 44 1493 651801
Email: hruksales@nov.com

Alberta – Canada
Phone: 403 279 6430
Email: hrccsales@nov.com

Quality Tubing

USA – Houston, TX
Phone: 281 456 0751
Email: qualitytubing@nov.com

USA – New Columbia, PA
Phone: 570 551 167
Email: qualitytubing@nov.com

USA – Odessa, TX
Phone: 936 588 9162
Email: qualitytubing@nov.com

Alberta – Canada
Phone: 403 342 1000
Email: qualitytubing@nov.com

United Kingdom – Scotland
Phone: 011 44 1224 774466
Email: qualitytubing@nov.com

UAE – Mussafah, Abu Dhabi
Phone: +01 9712550 1875
Email: qualitytubing@nov.com

Texas Oil Tools

USA – Conroe, TX
Phone: 936 520 5300
Email: totsales@nov.com

USA – Broussard, Louisiana
Phone: 337 839 0024

Wireline Equipment Locations

Elmar

Manufacturing Locations
United Kingdom – Aberdeen
Phone: +44 1224 740261
Email: ASEPElmar-UK@nov.com

Canada – Alberta, Calgary
(DynaWinch Product Line)
Phone: +1 403 319 2333
Email: Elmar-Canada@nov.com

Netherlands – Groot-Ammer
Phone: +31 184 608 700
Email: Elmar-NL@nov.com

USA – Houston
Phone: +1 713 983 9281
Email: Elmar-Americas@nov.com

UAE – Dubai
Phone: +971 4 810 0100
Email: Elmar-Dubai@nov.com

Singapore
Phone: +65 6546 0928
Email: Elmar-Singapore@nov.com

Regional Sales, Rental and Service Locations

Saudi Arabia – Al-Khobar
Phone: +966 3 887 9270
Email: Elmar-Dubai@nov.com

Australia – Perth
Phone: +61 8 9456 0999
Email: Elmar-Perth@nov.com

Norway – Stavanger
Phone: +47 51 81 81 81
Email: Elmar-UK@nov.com

Canada – Edmonton
Phone: +1 780 955 2898
Email: Elmar-UK@nov.com

USA – Louisiana
Phone: +1 337 839 0024 ext. 201

China – Beijing
Phone: +86 10 8485 1973

Russia – Moscow
Phone: +7 495 287 2691

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USA