WELL INTERVENTION AND STIMULATION EQUIPMENT
NOV’s Well Intervention and Stimulation Equipment is Engineered to be safe, oilfield tough, reliable, and cost competitive.

NOV’s proven Well Intervention and Stimulation Equipment performs; day after day — job after job.

National Oilwell Varco has recognized that well intervention and stimulation are vital and growing technologies. The NOV Well Intervention and Stimulation Equipment Group (WISE) was formed to focus on this important sector.

NOV’s WISE Group brings together some of the world’s leading engineering and manufacturing divisions in the areas of coiled tubing, nitrogen pumping, snubbing, pressure control, fracturing, cementing, wireline, acidizing, and associated engineering services.

The divisions are customer focused and dedicated to providing engineered equipment to customer specifications at a price that represents value. In addition, these divisions carry out targeted research to continuously improve products and processes.

With global presence, our aim is to make our customers successful. In addition to manufacturing facilities in the USA, Canada, UK, Singapore, Dubai, and Belarus, the WISE Group operates sales and service centers in the USA, UK, Dubai, Singapore, and Beijing.

For your next purchase of well intervention or stimulation equipment, make the WISE choice.
WELL INTERVENTION AND STIMULATION EQUIPMENT

NOV’s WISE Divisions include:

COILED TUBING EQUIPMENT

NOV HydraRig
The world’s leading provider of coiled tubing, nitrogen, snubbing and coiled tubing drilling equipment.

NOV Texas Oil Tools
A leader in design and manufacture of pressure control equipment for the well intervention and workover industry.

NOV CTES
The leading provider of data acquisition systems and modeling software for well intervention, specialized products, and engineering services for coiled tubing and wireline applications.

PRESSURE PUMPING EQUIPMENT

NOV Rolligon
A technology leader in the design and manufacture of fracturing, cementing, fluid pumping, and stimulation equipment control systems.

NOV Enerflow
A technology leader in the design and manufacture of fracturing, cementing, fluid pumping, and stimulation equipment control systems.

NOV Appco
The industry standard in Well Service Equipment recognized as the premier brand worldwide.

WIREFLIII LINE EQUIPMENT

NOV ASEP Elmar
The industry standard in Well Service Equipment recognized as the premier brand worldwide.
NOV Hydra Rig

Based in Fort Worth, Texas, since 1973, NOV Hydra Rig's products and services are recognized worldwide for quality and performance. Today NOV Hydra Rig has manufacturing facilities in the USA, UK, Canada, and Belarus as well as sales and service centers in the USA, Beijing, UK, and Dubai. No other manufacturer can match this commitment to customer service.

NOV Hydra Rig is the world’s leading manufacturer of CT, nitrogen, and snubbing equipment. With over 1300 CT units, 1500 nitrogen units, and 200 snubbing units in use worldwide, NOV Hydra Rig equipment meets the demand for rugged, dependable operation from the Tropics to the Arctic.

NOV Hydra Rig’s dedication to quality and continued research and development, along with strong after-sales support, have kept NOV Hydra Rig in this leadership position for over 39 years.
The Choice

From the North Sea to the North slope of Alaska, in the Persian Gulf or the Gulf of Mexico, NOV 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. High mobility, fast rig-up time, low maintenance, and most importantly superior unit control, increases its value every time it is deployed.
COILED TUBING (CT) EQUIPMENT

DRILLING EQUIPMENT

Coiled Tubing Drilling (CTD) is rapidly becoming the choice for underbalanced horizontal re-entry drilling in wells with fragile formations. Fast rig-up and shorter trip times make CTD cost effective, and generally results in higher production rates than conventional overbalanced drilling techniques. For specific types of well conditions, CTD also can be cost effective for turnkey drilling.

NOV Hydra Rig specializes 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.

MiniCoil Unit

The Capillary / Mini Coil unit was developed to service clients needs where deck space, crane limitations or in some cases both were prohibitive in economically servicing wells with traditional Capillary and Coiled Tubing units.

- 3 ton / 5 ton options
- Control Cabins
- Reels
- Power Pack - Engine Module
- Power Pack - Hydraulic Module
- Auxiliary Module - Hose Reels / BOP Accumulators
- Drop In Drum Frame and Drum (2 options)
- Pressure Control Basket
- Designed to run 5/8, 3/4 and 1" work strings
- 20,000 lb pull injector head capacity
SNABBING EQUIPMENT

Versatile HRS 340 short stroke handles 1” through 8¼” tubing and 340,000 lb. pulls

HRS 150 Short Stroke in final functional testing at NOV Hydra Rig’s Fort Worth location

Heavy-duty model HRS 600 Short Stroke handles pulls of 600,000 lbs. and has snubbing capabilities to 260,000 lbs.

Snubbing Units

NOV Hydra Rig Snubbing Units have earned a reputation worldwide for high performance and versatility in the field. Rig-up is fast due to lightweight, compact design and the elimination of the need to “kill” the well.

NOV Hydra Rig Snubbing Units are engineered to work on any pressure well, with pipe sized up to 8¼”, and pulls up to 600,000 lbs.

With over 200 units manufactured, our snubbing units are the industry standard.

Snubbing Products

- Short Stroke
- Long Stroke
- Rig Assist

New design HRL 150 long stroke units rigged up for customer acceptance in Algeria

Compact 95K Body-load Rig Assist
Nitrogen Equipment for Oilfield and Industrial Applications

Since 1984, NOV Hydra Rig has been a world leader in nitrogen pumping equipment for coiled tubing, fracturing and industrial applications.

NOV Hydra Rig’s Nitrogen Division includes liquid nitrogen pump and vaporization systems as well as cryogenic components such as high pressure pumps, cold ends, boost pumps and vaporizers.

Innovative technology and dependable equipment, such as NOV Hydra Rig’s patented “Heat Recovery Nitrogen Pump and Vaporizer System” and High Flow Rate Fired System with flow rates up to 2 million scfh, have continually placed NOV Hydra Rig in this position of leadership.

Nitrogen Products

- Non-fired Systems
- Fired Systems
- Truck, Trailer or Skid-Mounted
- Combo Nitrogen/Fluid Pumping Units
- Industrial Nitrogen Systems
- LN₂ Triplex and Quintaplex Pumps
- Cold Ends
- LN₂ Centrifugal Pumps
- LN₂ Vaporizers
Hydra Rig manufactures a full line of certified units that can include 3G T3 2A (Zone II), DNV 2.7.1, ATEX, CE marked, PED approval, PUWER and LOLER Compliance. Skid mounted units are available in both open skid and sound enclosed configurations, with sound levels as low as 80 db at one meter. Leadership in an industry must be earned. We are focused on product improvement and customer satisfaction to maintain our leadership position in the industry. Our willingness to provide customer specific solutions, and our commitment to service after the sale, are cornerstones of our goal of total customer satisfaction.

National Oilwell Varco’s line of Hydra Rig 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 Dba and Zone 2 certified.

Hydra Rig manufactures our own 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.

No matter how they are used, our nitrogen pumping systems will meet the toughest standards of oilfield performance, simply because they have more "oilfield tough" in their design than any other system on the market.
NOV Texas Oil Tools
Since its founding in 1978, Texas Oil Tools (TOT) has established itself as one of the leading specialty manufacturers and suppliers of pressure control equipment. During this period, TOT has expanded its range of products to meet the dynamic demands of the industry.

A proven track record of excellence in design, manufacturing, and service has gained NOV Texas Oil Tools worldwide recognition as a leader in pressure control products. We design and manufacture our products to the most stringent standards. We are a licensed API manufacturer and supply our equipment to meet or exceed industry standards.

Our product range begins with 1.50 in. bore and goes up to 9.00 in. In addition, our spectrum of products exhibit working pressures up to 20,000 psi and temperature ranges from -75°F arctic service to 500°F geothermal applications.

NOV TOT CT Pressure Control Equipment
- Blowout Preventers
  Single, Dual, Triple, Quad, Quint, and Combi Ram Designs
- Stripper Packers
  Side Door, Sidewinder, Conventional, Tandem Side Door, Over/Under, Two Door
- Quick Latches
  Hydraconn, Injector Connector, Quick Disconnect, Hydraulic Releasing Connector (JHS)
- Additional Equipment Offered:
  - Flanges
  - Flow Cross
  - Hand Unions
  - Lubricators
  - Safety Valve
  - Transport Lift Frames
  - Tubing Punch
  - Tubing Shear

Two Door Stripper Packer
NOV Texas Oil Tools has enhanced the Over/Under design to have two easy access doors. The new Two Door Stripper packer provides two packers in one Stripper with easy replacement and extended life packers.

"ES" BOP
3.06 in., 4.06 in., 5.12 in., and 7.06 in.
This is a lightweight, high pressure coiled tubing BOP package. Features include hydraulic ram change, balanced shear piston, and combi shear-seal and pipe-slip ram capabilities.
COILED TUBING (CT) PRESSURE CONTROL EQUIPMENT

Hydraconn™
The Hydraconn union provides a safe method to latch the CT injector to the BOP stack. It can be safely latched without a person underneath a suspended load. Visual indicators show when the tool is latched.
The tool is a hydraulically operated with a spring return; no chance for the tool to open under pressure. The Hydraconn is available in sizes for 3.06” – 7.06” bore sizes and pressure ratings from 5,000 – 15,000 psi.

EG52 Dual Combi
The EG52 is a versatile BOP. It is a low profile, light weight, 5,000 psi BOP designed to be as short and compact as possible but still maintain ruggedness and flexibility.
The BOP can be used as a CT BOP or as a Workover BOP.

WORKOVER AND SNUBBING PRESSURE CONTROL EQUIPMENT

Workover and Snubbing Products
- Ram Type Blowout Preventer
- Annular BOP
- Snubbing BOP
- Work Window
- Telescoping Riser

Snubbing BOP
The NOV Texas Oil Tools Bowen™ Snubbing product line has been improved to add benefits from the Texas Oil Tool’s products knowledge. The new Snubbing product line consists of the improved Snubbing BOP, Annular BOP, and the Rotating Stripper. The BOPs range in size from 2.56 in. – 4.06 in., pressure ranges up to 20,000 psi and are rated for H2S service.
The 4.06 in. Snubbing BOP shown is a 15,000 psi working pressure BOP with available rams for pipe, blind, snubbing, slips, shear, and shear seal. Two standard actuators can be used; the 16:1 actuator for all pipe, blind, and snubbing rams and the 25:1 for the shear actuator. The BOP is equipped with hydraulic ram change for quick and easy service.

Single Snubbing BOP

Annular BOP
The EJ Model Annular BOP is designed for CT, snubbing and wireline operations.
Light-weight and compact, it can be used as a stripper/pack-off with CT in the well, allowing large BHA’s to be inserted through the annular or as a CSo blowout preventer at times when the tubing is out of the well.
Unique features allow quick and efficient packer replacement, and a shorter overall height.
Configuration has studded body for quick removal of the bonnet and rapid packer removal and includes vented ports between the hydraulic system and the well bore seals.

www.nov.com/WISE
NOV Texas Oil Tools is a leading manufacturer of surface and subsea pressure control equipment for well intervention in Oil and Gas Production. We have manufactured Subsea BOP’s for coiled tubing and wireline applications worldwide for the past 25 years.

Unique designs include:
- Water depths to 10,000 ft.
- 300°F High Temperature
- -4°F Low Temperature
- 5,000, 10,000, and 15,000 psi WP Designs
- Elastomer Ram Seals for high pressure gas
- Explosive Decompression resistant ram seals
- New smaller compact Wedgelock Design
- Integral Autolock
- Hydraulic Ram Change

Standard Features
- Bore sizes 2.06 in. to 7.375 in.
- Metal to Metal bonnet gaskets
- External ram and wedge lock position indicators.
- Inconel Clad Ram bores, end connections
- Water or oil based hydraulic fluids

HPHT Ram Elastomers
- Elastomer Ram Seals for high pressure gas
- Metal to Metal bonnet gaskets
- Ram Indicator rods
- New smaller compact Wedgelock Design
- Inconel Clad Ram bores
- Water or oil based hydraulic fluids
- Explosive Decompression resistant ram seals

Coiled Tubing Well Intervention
- Subsea Safety Head Blind Shear rams meeting shear requirements from Norsok D002
- Coiled Tubing Blind Shear Rams
- Coiled Tubing Grip Seal Rams
- Subsea Stripper Packers
- Subsea Connector with metal x metal wellbore seals
- New developments for 20,000 psi

Slickline and Braided Wire Well Intervention
- Subsea Riserless Wireline Well Intervention
- Subsea Grease Head
- Subsea Inhibitor injection system
- Subsea Ball Check Assembly
- Subsea Head Catcher
- Subsea Riser
- Subsea Tool Trap
- Subsea Connectors
- Wireline Rams
- Multi-range Wireline Rams
- Shear Seal Rams
DATA ACQUISITION SYSTEM

CTES offers data acquisition systems and specialized monitoring sensors; advanced coiled tubing (CT) monitoring devices; modeling software for intervention, drilling, and completion; product engineering; 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.

The Orion V DAS 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:
    - Coiled tubing fatigue life, forces acting upon the CT (NOV CTES Cerberus software required)

- Those from the fluid pumper:
  - Roadside and curb side flow rates and volume
  - Via OrionNET software
  - Total combined flow rate/volume

- Diagnostics
  - System health indicators
  - Fuse blown
  - Digital, quadrature, and serial I/O module status
  - Communication

- Small footprint: Electronics enclosure size: 16”W x 12”H x 7”D

- Retrofits to existing CT units

- Provides detailed job-report storing and printing (via OrionNET software)

ENGINEERED PRODUCTS

**Depth Measuring System (DMS)**

The DMS provides a dual-wheeled design that incorporates slippage 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/min or lower, with ±0.002 in. accuracy.

**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 (ESS)**

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

Cerberus™ for Coiled Tubing

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

Fatigue

Today’s complex CT 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 and trustworthy.

Forces

The Orpheus tubing forces model calculates the cumulative forces acting on the CT, 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 toolstrings (BHAs) with features that include knuckle joints, centralizers, and rollers. The Toolfit Wizard uses advancing modeling, developed by NOV CTES, to help the customer design a toolstring capable of navigating highly deviated wellbores or other obstacles.

Hydraulics

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 the user – along with NOV CTES – easily identify issues encountered in acquisition from four datasource types: Orion V, Orion IV, ASCII via Serial, and Derived Channels.

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.

The reporting functionality allows OrionNET users to create hard copies of data or PDFs for electronic distribution.
FRACTURING EQUIPMENT

Over the years, NOV’s Pressure Pumping Equipment Group has played a key role for our customers, supplying oil field tough, safe, reliable and cost competitive equipment. Our Rolligon™ and Enerflow™ brands provide hydraulic fracturing pumps and blenders, cementing equipment, coiled tubing support pumps, acidizing equipment, liquid additive systems (LAS) and data vans that not only meet our customers’ expectations, but are also designed to exceed them.

Since 1999, the Rolligon™ brand has risen to the top of the stimulation/fracturing equipment industry through strong engineering and experience. Our most recent addition of the Enerflow™ brand to the NOV family further strengthens this position and gives our customer an even broader selection of choices and custom manufactured equipment. From concept to operation, Pressure Pumping Equipment Group focuses on providing custom made equipment packages that are designed not only for performance, but to also provide longevity and reliability throughout the years of service.

NOV Pressure Pumping Equipment Group “We don’t follow precedent…We set it!”

Stimulation Products
- Truck, Trailer and Skid Mounted Equipment Designs
- Blenders from 30 BPM to 135+ BPM
- Fracturing Units from 800 BHP to 2500+ BHP
- Liquid Additive Systems with Tank Slide System
- Hydration Units
- Data Van and Data Acquisition Systems
- Manifold Systems
- Transfer Pumps
- Acid Units
- Cementing Units
- Frac / Blender Combo Units
- Retrofit Controls Systems for Blenders and Frac Units
- Bulk Proppant Handling Solutions
- Iron Transport and Crane Units

Rolligon™ and Enerflow™ continually set the industry standards with user friendly automation systems, such as Fractrac™, Chemtrac™, Hydratrac™, Dastrac™, FCII™ and Ecams™. NOV electronics and programming teams are continuously upgrading and modifying these unit and data acquisition control systems to meet our customers’ daily challenges.
PRESSURE PUMPING EQUIPMENT

Rolligon Trailer Mounted Blender

Frac Stimulation Vessel with complete Rolligon Frac Spread

Enerflow Trailer Mounted Blender

Rolligon Trailer Mounted Liquid Additive Unit

Enerflow Trailer Mounted Hydration Unit
CEMENTING EQUIPMENT

Our cementing equipment utilizes continuous automatic mixing (CAM) III high energy mixing technology to mix the high quality cement slurries required today. Automatic Density Control system patents provide our customers with the ease of operation they demand, as well as a consistent and repeatable slurry quality.

Cementing Products
- Twin Pump Cementing Units with Recirculating Cement Mixing Systems
- Single Pump Options
- Automatic Density Control Systems
- Cement Batch Mix Units
- Combination Cementer/Acidizers
- Truck, Trailer or Skid Mounted
CT Support Units designed and manufactured by the NOV Pressure Pumping Equipment Group are designed with you, the operator, in mind. Easy access to maintenance items, simple control logic and operator comfort are top priorities and part of the reason we are the number one industry choice for this product.

**CT Support Products**
- Twin Pump Units for extended pump time
- Two (2) Speed boxes for low pump rates
- Data Acquisition Systems
- Single Pump Options
- Remote Control Options
- Options for Stainless Material
- Large Fuel Capacity

Enerflow Truck Mounted Single Pump Unit

Enerflow Skid Mounted Multi-Purpose Single Pump Unit

Enerflow Trailer Mounted Quintuplex Pump Unit

Enerflow Trailer Mounted Twin Pump Unit

Rolligon High Ambient Twin Pump Unit rated for 140°F

Rolligon Trailer Mounted Twin Pump Unit
Acidizing units are an essential component to the stimulation industry. We manufacture a complete line of products to meet our customers’ challenges in providing this service.

- Trailer Units with Acid Transport Systems
- Tractor Mounted Kill Units
- High Horsepower Acid Units with Mix Tanks
- Data Acquisition Systems
- Acid Data Vans
COMPLIMENTARY PRODUCTS

The NOV Pressure Pumping Equipment Group places the same high values on products as we do on “after the sale” service to our customers. From our complimentary product offerings such as Capillary Tubing Units and Low Ground Pressure Vehicles to our Rebuild / Retrofit Facility in Houston, Texas, our goal is to provide our customers with the same high degree of confidence and peace of mind they associate with the NOV brands. Our Rebuild / Retrofit Facility is in place to help our customers maximize the value of their capital equipment fleets and minimize their operational expenses as they serve the worldwide oil and gas industry.

Low Ground Pressure Vehicles

All Terrain Amphibious Vehicles  Geophysical Support  Pipeline Stringing Vehicles

Capillary Tubing Units

NOV’S Pressure Pumping Capillary Tubing Units are custom built designs featuring the Patented Powered Sheave design available in two (2) different pull ratings for running ¼” and ½” tubing.

Rebuild/Retrofit Facility

From this...  ...to This!

NOV’s Pressure Pumping Rebuild/Retrofit Facility is focused on turning your damaged or old units into money makers. We are equipped to handle anything from replacement of your existing controls to complete unit rebuilds.
FRAC - SAND HANDLING EQUIPMENT

NOV APPCO is a worldwide 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.

NOV APPCO’s headquarters, largest manufacturing plant, and service facilities are strategically located in San Antonio, Texas. Close to international shipping ports, we are able to satisfy the most urgent needs of our domestic and foreign customers.

**Multi - Sanders**

Multi-Sanders are diesel-powered units that can take discharge from multiple Frac-Sanders and deliver up to 30,000 lbs. of material to one or two blenders per minute. These units are legal width and length and can accommodate from one 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 cross cleats. This provides a compartmented belt system that allows for the high angle discharge of materials into the double discharge chute system.

**Frac - Sander**

Powered by an industrial diesel engine, the NOV APPCO Frac-Sander consist of multiple compartment storage systems. The proppant is discharged from various compartments through multiple gates onto a hydraulically driven belt conveyor that delivers proppant to the multi-sander or directly into the receiving hopper of the blender.
FRAC - SAND HANDLING EQUIPMENT

Sand Storage Tanks
NOV APPCO's sand storage units provide up to 5,000 cu. ft. volume per silo with a self-contained bucket elevator and dust collection system in an easily movable and erectable configuration. Our high volume storage solution is for massive storage and load out of bulk materials such as frac-sand and other materials. Terminals are available in varying sizes and configurations.

Mobile Unloading Conveyors
Frac-Sander Unloader: The mobile Frac-Sander unloading belt conveyor is used for the removal of excess proppant (and other materials) in the Frac-Sander. The Mobile Railcar Unloader is used to unload proppant (and other materials) from bottom drop railcars directly into pneumatic trailers for transport.

Quad Dust Collector
The NOV APPCO DCS580-QUAD was developed to address concerns related to controlling dust generation created during pneumatic filling of the Frac Sander. Removing harmful particulate from the air benefits overall health and safety (HSE) for all operating personnel at a frac site. The collection system allows for up to four pneumatic trailers to fill the Frac Sander simultaneously and can be designed into new frac sanding systems or retrofitted to existing equipment.

Parts and Service
NOV APPCO operates a complete Department able to respond quickly and efficiently to any customer needs and/or to solve any operating problems that might be encountered in the field. We pride ourselves on our ability to find the right solution to every unique challenge and to deliver the right part to your site to minimize downtime and keep your equipment on the job.
SLICKLINE AND ELECTRIC LINE EQUIPMENT

Our Vision
Elmar and ASEP were both formed in 1981 and became leaders in their respective fields. Both companies became known as designers and manufacturers of products that could be trusted and relied upon, and thus their products could be found in all oil fields of the world. Few in the oilfield intervention business will not have heard of the ASEP™ K-WINCH or the Elmar™ 5 Series module.

With the acquisition of ASEP by NOV in 2009 and ASEP’s subsequent merger with Elmar, the combined company NOV ASEP Elmar can provide a wireline service company with the full package it needs to perform an intervention – from the winch unit to the pressure control to the tools.

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

Our Innovation
We have always been an innovation led company. Our team of design engineers based in the Netherlands, Scotland, Dubai, Singapore, Belarus, USA and Turkey are conducting challenging research and development projects as well as client specific design programs.

Aided by the most up-to-date engineering and analysis software, our designs are robust, long lasting and comply with relevant region-specific regulations such as NORSOK and ATEX.

Driven by the high cost of energy extraction and with a clear mandate to limit environmental impact, well servicing companies are constantly searching for increasingly more efficient technology and we aim to deliver.

Our newest development, the e-drive winch, utilizes the latest materials and technologies — the e-drive is a fully electronic truck-mounted or offshore winch system controlled by the NOV ASEP Elmar SmartMonitor. Designed to operate without a diesel engine, the result is a quieter, more controlled and environmentally friendly product which can be operated remotely from anywhere in the world. Today the e-drive. What will tomorrow bring?

Our People
The best products in the world achieve nothing without competent people to operate them and a professional level of after sales support. With 16 locations around the globe we are never far from our customers, and our global product database allows us to pinpoint any parts or service personnel required and dispatch them at short notice. We are able to offer our clients a respected and challenging training program to satisfy all competency requirements: in a local language if required.
Our Products
Our products are what have made us so well known and require little introduction, however in 2009 we have simplified our product ranges and introduced their new product badges. Products are available for rental or for sale. Contact your nearest NOV ASEP Elmar office for more details.
SLICKLINE AND ELECTRIC LINE EQUIPMENT

NOV ASEP Elmar's E-Drive
The NOV ASEP Elmar e-drive unit is expected to set a new standard in wireline logging and slickline activity. The fully electronic truck-mounted or offshore winch system is controlled by NOV ASEP Elmar’s SmartMonitor and designed to operate without a diesel engine. Electrical power can come direct from a rig supply or from a diesel powered generator where the supply is not available.

Capable of delivering all the functionality of NOV ASEP Elmar’s standard K-WINCH units, the e-drive can be controlled based on information from Well Profile Prediction software.

A further advantage is the reduction in environmental impact. With a fully electric solution there is no need for hydraulics and therefore no risk of fluid leakages.

SmartMonitor
By integrating SmartMonitor technology into the already well-known K-WINCH system the working environment is greatly improved as the system is operated through a touch screen computer either on-board or remotely. The result is a quieter, more controlled and environmentally friendly product which can be operated remotely from anywhere in the world.

The replacement of the entire hydraulic system and operators control panel with robust and proven software and electronics has a huge effect on reliability and cost of use. Improving the safety of our operators is a key factor in the development of any new technology and the near virtual nature of the e-drive is exactly the direction we are looking to take with our products.

Coming in 2010 is the ability to control all wireline BOPs, pumps and panels and grease injection skids from a Smart Monitor either in the cabin or on the BOP control skid.

Wireline Tools
NOV Downhole division has now completed the transfer of all of the NOV slickline tools product line to NOV ASEP Elmar. This move will consolidate overlapping products, enhance our ability to service our client’s needs and streamline new product development by leveraging the established strengths of the respective product lines.

When our clients issue requests for quotations for well intervention equipment, slickline wireline tools are frequently bundled with other NOV ASEP Elmar products such as winches, masts and surface pressure control equipment. We are now ideally placed to offer our clients the full spectrum of well intervention equipment requirements.

Engineering, product line development and production of the slickline wireline tools product line will be centered at the NOV ASEP Elmar manufacturing and service facility in Singapore.

NOV ASEP Elmar now has the most comprehensive high quality slickline wireline tools product offering available anywhere.
SLICKLINE AND ELECTRIC LINE EQUIPMENT

Holing and Slotting of Tubulars
NOV ASEP Elmar have a facility in Aberdeen, housing five specialized machine tools that pre-hole or pre-slot oil industry casing and liner. First established in 1982, this facility has successfully managed individual projects in Europe and Africa requiring over 200,000 ft. of slotted casing. Hole size can be from .375” to 1” and slot widths from .012” to .25”. A full deburring service is available prior to inspection and delivery. This service is offered in accordance with ISO9001:2008.

TCP Gun Manufacture
NOV ASEP Elmar have TCP gun carrier manufacturing facilities in Aberdeen and Dubai. Using the latest CNC machines and with a global capacity of over 1 million feet of guns per year, NOV offers the client local support in this demanding market.

Horizontal Tree Isolation Plugs
NOV ASEP Elmar’s horizontal tree isolation plug is a high pressure, high temperature elastomeric sealing unit with a no-go lock system that positively aligns the plug within its corresponding nipple profile. It is designed to hold pressure from below by key/nipple engagement and to hold pressure from above by no-go/nipple arrangement. New subsea crown plug designs are subjected to rigorous PR2 testing and are manufactured from corrosion resistant alloys when required.

For more information on NOV ASEP Elmar including contact details, news, service facilities and documentation download please visit our home page:

www.nov.com/ASEPElmar

30,000 psi Wireline Pressure Control Equipment
No-one else can do this: 30,000 psi Wireline Pressure Control Equipment. Another world first from NOV ASEP Elmar. Designed to a massive 54,000 psi ASEP Elmar’s new NOLA™ wireline pressure control set is a true record breaker. Providing confidence and enhancing safety in Wireline Intervention.

Wireline Pressure Control Equipment
All our new designs are designed, manufactured and tested in accordance with API 6A or API 5CT. Selected new designs are tested to destruction or are gas tested, and are designed using the latest finite element analysis software. Products range from simple 3,000 psi rated pack-offs to 30,000 psi rated pressure control strings. We offer a fast turnaround crossover manufacturing system in recognition of the need for rapid response with this product.
DYNAWINCH™ PRODUCT LINE

DynaWinch Product Line Equipment
Designed to operate in arctic, desert and tropical oilfield environments, our slickline and logging units can be modified to perform other wireline service work applications. In addition to the 100% aluminum, all welded frame, there are many options available for the hydraulics, measuring systems, spooling methods and power configurations.

We also offer several options of one-piece, stiff or telescoping mast units that can be used in a variety of vertical and/or slant well operations. Our one-piece derrick unit can be used for heavy duty logging and swabbing service work applications.

Emphasizing the need for portability, our land-based skid units range from light, heli-portable models to large container-style workshop/logging units. With size and weight constraints required for offshore environments, we offer slickline and logging skids that are easily transportable, weight conscious and certified to meet any of our customers’ requirements.

The DynaWinch Product Line includes:
- Slickline, swabbing and logging van units, including swing models that allow for greater versatility at the well site
- Single stage, telescopic and stiff mast models, including a heavy-duty derrick model
- Portable skid units, including single or multi-module designs, incorporating winch, operating and power pack units
- Off Shore Zone II skids can be ATEX, DNV and CE certified

SV2-140 Slickline Van Unit
LV2-100 Cased Hole/Open Hole Logging Unit
LM2-255 Tandem Axle Telescoping Mast Unit
WD3-348 Tri Axle Swab Rig Unit
SC2-620 Combination Crane/Slickline Unit
WS1-545 One Piece Swabbing Skid
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