



DanaEnergy

Oil Tools

Who We Are

Dana Energy's **Oil Tools** business has become a vital and essential part of drilling industry in Iran. With the goal of meeting our country's technological needs and a strong dedication to completing the entire spectrum of drilling activities, we add significant value by leveraging our excellent manufacturing capabilities. Currently, our focus lies in crafting various completion tools designed for oil and gas wells. We aim to push the boundaries of manufacturing in the drilling sector, propelling it into new realms of advancement and growth.



Our Main Objectives

- Implementing service and product excellence
- Meeting and enhancing feedback from interested parties and clients
- Appropriately addressing occupational health, safety, and environmental incidents and impacts based on organization's context, size, and risks
- Project planning and control
- Manufacturing
- Assembly and testing
- Research and development

What We Do

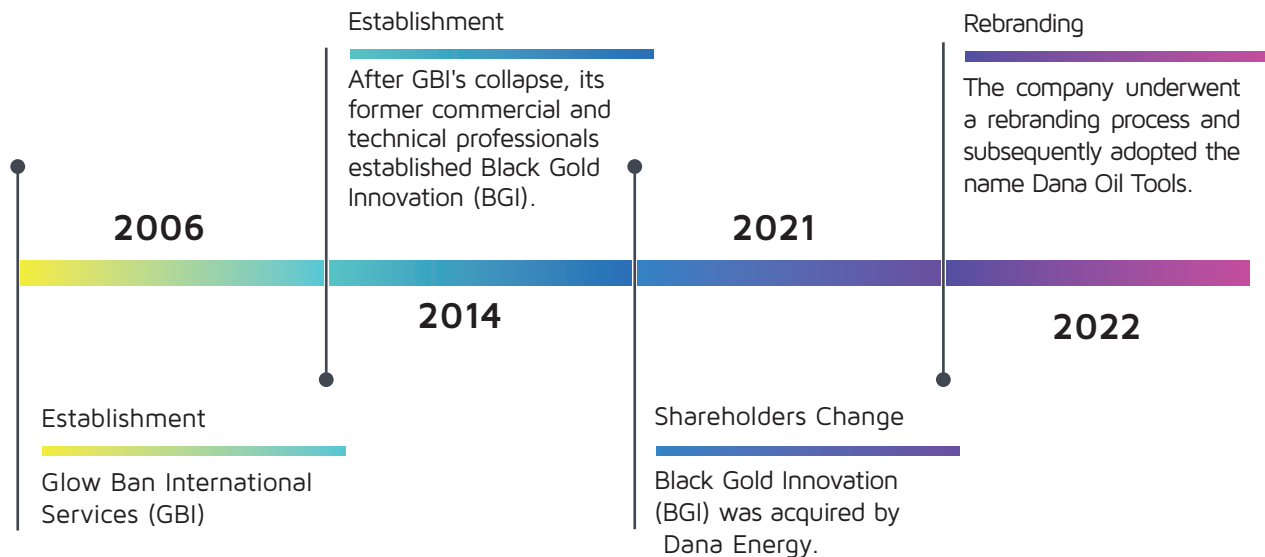
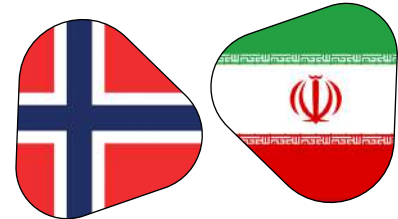
We provide an extensive lineup of fully integrated Completion Systems, seamlessly combining equipment, products, processes, procedures, and programs. This integration yields a blend of top-tier and purpose-specific products and services. Our production includes well completion tools designed for reservoir pressures of 10000~5000 psi, produced at scale. Additionally, our focus on research and development aims to introduce high-quality downhole tools, encompassing monobore, liner hanger, dual completion, multilateral completion, smart completion, and bits.



Agency

Well Innovation is a company dedicated to technological advancement and investment, with a specific focus on the energy sector. Their specialization lies in the transformation of conceptual ideas into commercially viable products. Proficiency in designing, prototyping, testing, and the commercialization of technologies that integrate components across mechanical, hydraulic, and electronic disciplines underscores their expertise.

History



Products and Services

We offer a comprehensive array of fully integrated Completion Systems designed for onshore and offshore fields. Furthermore, we proudly serve as the exclusive representative of the Norwegian company, Well Innovation AS in Iran.

Our product lineup comprises Monobore, Multilateral, Smart, and Dual completions, all of which are compatible with those from Baker Hughes, Halliburton, Camco, and Otis. Additionally, we are actively engaged in research and development to further expand the scope of our product range.

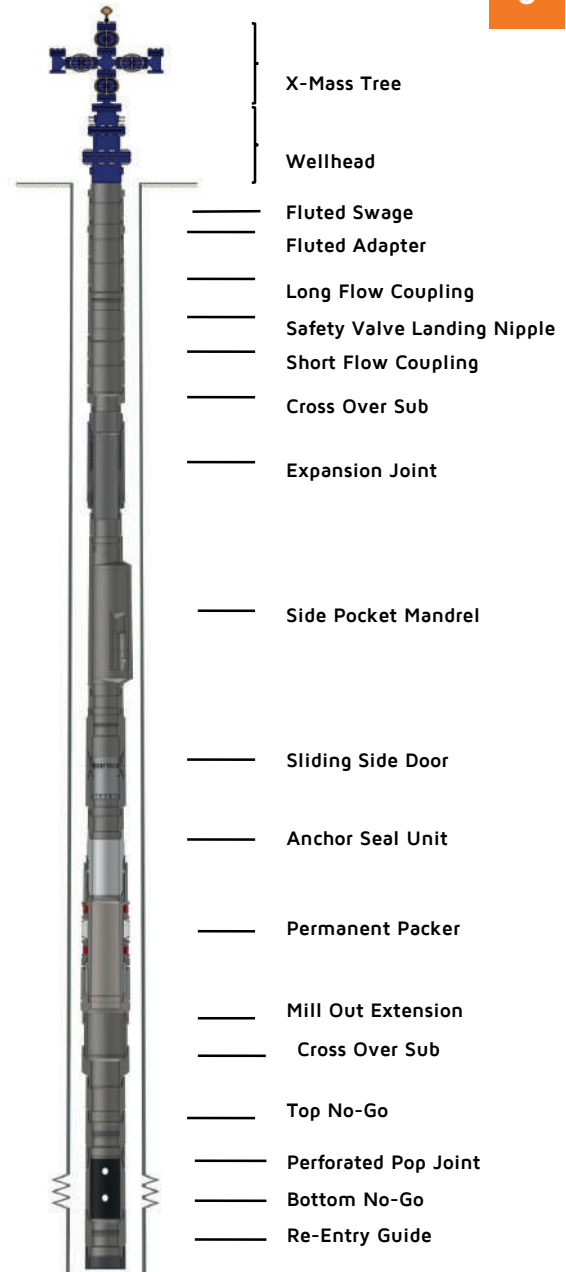
Conventional Completion String

Completion strings serve as the intermediary link between the reservoir and surface production. In fact, the management of oil and gas production or the injection of hydrocarbons, gas, water, steam, and waste products into a well relies on the utilization of completion string equipment and its accompanying wireline accessories. The efficiency of well productivity and the overall cost of reservoir exploitation are significantly influenced by the performance of the completion string equipment. As a result, utmost dedication should be directed towards achieving an optimal design and manufacturing process for completion strings. We provide a comprehensive range of downhole completion strings along with all associated equipment, encompassing:

- Standard flow equipment items such as Fluted Swage, Adapters, Flow Coupling, Cross Overs, Perforated Joints, Mill Out Extension, Wireline Re-entry Guide, etc.

Safety Valve System including Tubing and Wireline Retrievable types with all accessories

- Expansion joints with different strokes
- Artificial and Injection system including Side Pocket Mandrels and Chemical
- Sliding sleeves with all the tools and accessories
- Packer System, including single and dual packers (permanent and retrievable)
- Landing Nipples of both ported (for safety valves) and non-porting types with all the accessories and tools such as, Blanking Plugs and Instrument Hangers with all their accessories, tools and also wireline tools.
- All completion accessories such as control lines, Banding Strap, Banding Buckles, etc.



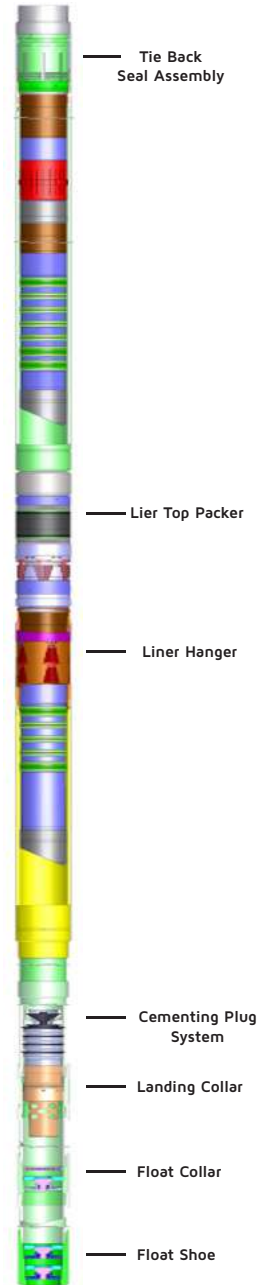
Monobore Completion String

As the official and exclusive representative of Well Innovation Norway, we proudly present the innovative Monobore completion system for Iran's fields. With approximately 60 successful installations in the South Pars region, this pioneering technology features a single production tubing size extending from the pay zone to the surface of the completion. This approach offers numerous advantages, including minimized drilling costs and a streamlined equipment inventory by eliminating the need for packers, sliding sleeves, and more.

The Monobore completion system has proven particularly beneficial for wells that may not be viable using conventional completion techniques. By employing this advanced system, rig time and expenses are significantly reduced while ensuring a safe and effective well completion process.


Features and Benefits

- The cement Bond (Liner Lap) can be tested and confirmed prior to running and setting of the isolation top packer
- The Monobore Liner system has undergone detailed testing program with the Seal Technology being third-party approved and fully validated as per ISO 14310 V0 specification
- Wells that were estimated to produce 500-600 bbl/day were improved to 1,200-1,400 bbl/day



Liner Hanger

Specification Guide



Host Casing Size (in)	Casing Weight (ppf)	Hanger OD (in)	Lower PBR ID (in)	Minimum ID (in)	PBR Length (ft)	Rated working Pressure (psi)	Material
9 5/8	47-53.5	8.353	7.244	6	6	7,500	L-80 & CRA 28% Cr
7	29-35	5.674					L-80

Permanent Packer


Specification Guide

Host Casing Size (in)	Casing Weight (ppf)	Packer OD (in)	Upper PBR ID (in)	Packer and seal Assembly Minimum ID (in)	PBR Length (ft)	Rated working Pressure (psi)	Material
9 5/8	47-53.5	8.353	7.244	6	15	7500	L-80 & CRA 28% Cr
7	29-35						L-80



Tieback Seal Assembly

Specification Guide



Host Casing Size (in)	Casing Weight (ppf)	TBSS OD (in)	Seal bore ID (in)	Minimum ID (in)	Length (ft)	Rated working Pressure (psi)	Material
9 5/8	47-53.5	8.353	6	6	15	7,500	L-80 & CRA 13-28% Cr
7	29-35						L-80 13% Cr

Services



South Pars

Monobore /60 Wells

Azər

Conventional 10K /
2 Wells

BiBi Həkiməh

Conventional /6 1Well

Rəmshir

Conventional /6 Wells

Məroun

Conventional /1 Well

Souləbe Dər

Conventional /4 Wells

Mansouri

Conventional /9 Wells

Siahmakan

Conventional /4 Wells

Shorijeh

Conventional (under-grand
gas storage) /10 Wells

West Paydar

Conventional /4 Wells

Achievements

As an organization driven by the principles of an **Integrated Management System** and recognized as a **Knowledge-based Enterprise**, we are resolute in our dedication to achieving objectives through continuous improvement. This commitment is showcased through the implementation of the following standards: ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, API Q2:2021, and API Q1:2014, enabling us to join the ranks of knowledge enterprise companies, which are defined as enterprises that offer knowledge and knowledge-based products to the market.

IPI Certificates

- Flow Control Equipment: NO Go and SSD
- SPM, Packer and Travel Joint



Dana Oil Tools Co. Certificate No: 960973			
Product/Item	Specification	Reference Standard/ Manufacture Procedure	
Production & After sales services	Wellbore Intervention Subsea Flow Safety Valves (Including 1 x 6" Model and Control System)	API 14A January 2015, 12 th ed.	
	Permanent Packer & Anchor Seal	API 11B1 April 2015, 1 st ed.	
	Sliding Side Door (SSD)	API 19AC September 2016, 1 st ed.	
	Completion Assessment Pressure Controlling Travel Joint	API 19AC September 2016, 1 st ed.	
	Side Packer Moulder	API 19C1 February 2016, 2 nd ed.	
	Permanent Packer & Anchor Seal	API 11B1 April 2015, 1 st ed.	
	Design	Sliding Side Door (SSD)	API 19AC September 2016, 1 st ed.
		Completion Assessment Pressure Controlling Travel Joint	API 19AC September 2016, 1 st ed.
		Side Packer Moulder	API 19C1 February 2016, 2 nd ed.
		Side Packer Moulder	API 19C1 February 2016, 2 nd ed.

- Certificate of conformity according to ISO 14310 - Lower PBR - Seal Stem
- Design approval certificate according to ISO 14310 - PBR - Seal Stem
- Certificate of conformity-No 16875_Packer
- Design approval certificate-no K16875_Packer

Inspecta

CERTIFICATE
(Certificate of Conformity)
acc. to ISO14310

Manufacturer and address | Well Innovation AS,
Kantveien 8,
Postboks 894,
N-4066 STAVANGER

Certificate No: 17194

We hereby certify that the results of tests and control carried out on the equipment mentioned below fulfill the requirements of ISO14310.

Tested acc. to: ISO 14310
Category: Grade V0
Acceptance certificate no: K17194
Description of equipment: Lower PBR / Seal Stem
Manufacturing No: 1038
Manufacturing plant: Well Innovation / Centrix Machining AS
Kristiansand, 2010-09-20

Inspecta AS

Racine van den Berg (sign)

Inspecta AS
Postboks 890
N-4066 Kristiansand

Inspecta

CERTIFICATE
(Certificate of Conformity)
acc. to ISO14310

Manufacturer and address | WIP Innovasjon AS,
Kantveien 8,
Postboks 894
N-4066 STAVANGER

Certificate No: 16875

We hereby certify that the results of tests and control carried out on the equipment mentioned below fulfill the requirements of ISO14310.

Tested acc. to: 406 1E140
Category: Grade V0
Acceptance certificate no: K16875
Description of equipment: Packer
Manufacturing No: 16875
Manufacturing plant: Well Innovation / Centrix Machining AS
Kristiansand, 2010-09-18

Inspecta AS

Racine van den Berg (sign)

Inspecta AS
Postboks 890
N-4066 Kristiansand

Inspecta

Revision 01 Legal from 00.07.10

Design approval certificate in accordance with the ISO 14310 standard for "Petroleum and natural gas industries - Downhole equipment - Packers and bridge plugs".

Certificate Number: K17194

Manufacturer: Well Innovation AS
Address: Kantveien 8, Postboks 894, 4066 STAVANGER

Equipment: Seal Stem - PBR
Project number: 1038
Year of manufacture: 2010
Design pressure: 817 Bar
Design temp: 121 °C
Test pressure: 972 bar

Harmonized standard (acc. ISO 14310):
Alternative standard used: NA

Based on the drawings and report:

Doc Number	Description	Rev	Sheet	Format
W111888	Case for Seal Stem - Lower PBR	02	2 of 2	Drawing
W112110	Packer and Seal Stem - Lower PBR	02	2 of 2	Drawing
W1121070	Seal Stem - Seal Stem - Lower PBR	02	1 of 1	Drawing
W1120700	Seal Stem - Seal Stem - Lower PBR	02	2 of 2	Format
W1120700	Report - Seal Stem - Lower PBR	02	1 of 21	PDF

The undersigned declares that the design and manufacture of this equipment conforms to the requirements of the ISO 14310 V0 standard.

Date: 2010-12-02 Name: Racine van den Berg
Position: Senior Engineer
Signature:  **Inspecta**

Note: 1) Any significant change in the product design, production procedures makes this certificate invalid. Minor adjustments in the design can be accepted if duly documented.
2) Production needs to be documented by means of applicable material certificates and fabrication procedures.

Our Teams

- Engineering
- Fabrication
- Supply Chain
- Planning and Project Control
- HSEQ
- Assembly & Test

Health & Safety

At Dana Energy, we believe that people come first and that our commitment to their safety and health is an integral part of our culture.

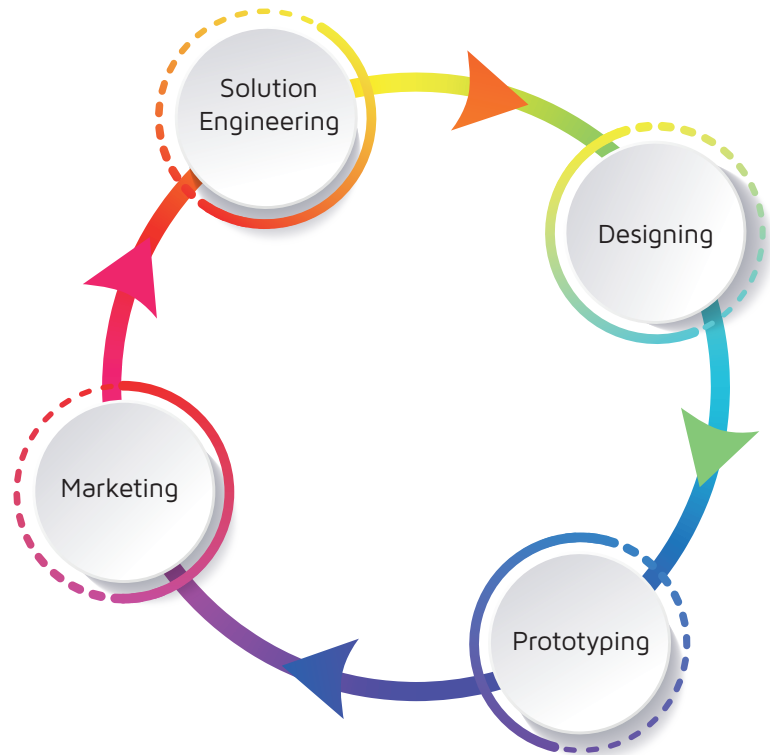
We apply health and safety procedures to all the hazards associated with our operations. We are constantly striving to learn, share, and improve personal safety efforts by instilling a culture of safety leadership, fully engaging all employees in safety, and providing a safe working environment for all employees and contractors.

Assembly & Test

Based on the API and ISO standards and under the supervision of Dana Energy experts, assembly and test of downhole completion tools are implemented with the following equipment:

- Validation Test Bench: Suitable for packer and Safety Valve validation test up to grade V2, Hydro and gas pressure test up to 15K, axial load up to 400 ton and cycling temperature up to 200 C.
- Side Pocket Mandrel Test Bench: According to API 19G1 up to V1 and F1 tests, calibration and nitrogen charge and discharge unit.
- Make-up & Break-out Machine: Suitable for 3.5" to 13 5/8" connection.





Engineering design

1. Solution Engineering
2. Designing
3. Prototyping
4. Commercialization of any missing pieces

Environmental Practices

At Dana Energy, we are conscious of the potential environmental impact of our business activities. To mitigate these impacts, we act and adhere according to international environmental standards. Our company is fully committed to this policy, and we encourage all employees and contractors to adopt a proactive approach towards environmental protection.

We maintain a specialized and well-equipped engineering workshop tailored for crafting a diverse range of downhole completion equipment. Our core manufacturing procedures encompass milling, drilling, boring, turning, deep hole drilling, welding, wire EDM, threading, grinding, sawing, honing, stamping, coating, plating, and painting. What sets us apart from our counterparts are the distinctive features outlined below:

- More than 20 CNC and manual turning machines with special turning tools and facilities
- More than 7 special CNC machines which programmed to manufacture different VAM series threads
- Three deep hole machines with 400 mm work diameter and 12000 mm work length drilling and honing capability
- 3 and 4 axis milling machines which make us capable to manufacture complex completion and wire line parts
- High speed wire EDM machine with 0.02 accuracy

Projects and Clients

Offshore Projects:

- Forouzan/POSCO
- South Pars/POGC

Onshore Projects:

- Ramshir & Mansouri / OIEC
- Siahmacan / PECO
- Soulabe Dar / OEID
- BiBi Hakimeh / Sealand
- Maroun / NISOC
- Shorijeh / Mapna
- Azar / Sarvak Azar
- West Paydar / KKC

Special Projects:

Fabrication of spare parts for main equipment of drilling rigs, such as:

- Draw works
- Top Drive
- Mud Pumps
- BOP
- Agitators
- Sand Pumps
- Air Compressors
- Solid Control System



posco

Production Line

We possess a well-equipped and unique machine shop for manufacturing various types of downhole completion equipment. Our primary manufacturing processes include milling, drilling, boring, turning, deep hole drilling, welding, wire EDM, threading, grinding, sawing, honing, stamping, coating, plating, and painting. We stand out from other companies in the following ways:

- More than 20 CNC and manual turning machines with special turning tools and facilities.
- More than 7 special CNC machines which programmed to manufacture different VAM series threads.
- Three deephole machines with 400 mm work diameter and 12000 mm work length drilling and honing capability.
- 3 and 4 axis milling machines which make us capable to manufacture complex completion and wire line parts
- High speed wire EDM machine with 0.02 accuracy.



Turning CNC & Manual
Fanuc Control
MAX: Ø630 X5000



Wire Cut:
Soapy Water Back and Forth
MAX: 600X500X400

Deep Hole & Honing:
MAX: Ø350 X 7000
MAX: Ø230 X 9000



Milling CNC & Manual:
3 Axis & 4 Axis
MAX: 2000X1000X800

Why Dana Energy?

Choose Dana Energy for your needs, as we offer unrivaled quality, an efficient management system, and a knowledgeable-based enterprise. Our proficient team ensures top-notch solutions tailored to your requirements.



DanaEnergy

Dana Oil Tools Co. (JSC)

No. 6, Gomnam Aly., Sina Darou St., 52nd Ave.,
Lashgari Hwy., Tehran, 1388163951, Iran

Phone: +98 (21) 24314400

Fax: +98 (21) 24319981

Email: OilTools@danaenergy.com

Website: www.danaenergy.com