



IKM  
Testing AS

# Pipeline-Mechanical Completion-Commissioning

Integrated Services





# IKM Testing AS

The company was established in 1992 and has grown to become a major supplier of inspection, testing, cleaning and mechanical completion services both to the onshore and the offshore industry. IKM Testing has its head office at Sola, Norway and departments in Bergen, Kristiansund and Hammerfest.

## International Focus

Subsidiary companies have been established in UK, Spain, Singapore, Canada, Australia, Malaysia, Thailand, Indonesia, Poland, Brazil Korea and Mexico. IKM Testing will continue to establish new businesses, make strategic acquisitions and form alliances in order to steadily develop as a quality supplier.

## Ownership

IKM Testing AS is 100% owned by IKM Gruppen AS, which is again 100% owned by Mr. Ståle Kyllingstad.

- Quality System: NS-EN ISO 9001:2015
- Environmental Management System:  
OHSAS 18001:2007 / ISO 14001:2015
- Achilles id. no.: 23137
- Sellihca id. no.: 100911
- StartBANK ID: 134367
- Member of PPSA (Pigging Products and Services Association)



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## A part of the IKM Group

*IKM Testing is part of the IKM group – a multidiscipline sub supplier focusing primarily on the oil and gas industry. The IKM Group conducts business within the following five areas: Electrical/Instrument/Automation, Subsea Completion/Commissioning, Engineering/Operations, Fabrication/Inspection and Rig / Downhole Services.*

*Focus on Growth is always the goal, and IKM's ambition is that even the most demanding customer shall choose IKM as their preferred business partner. All IKM companies are ISO-certified, and through internal revisions, audits, and continuous monitoring, IKM Corporate Group ensures that it meets and exceeds the needs of its customers and employees with respect to quality, health, safety and the environment.*

## Our Values

- Responsible
  - Bold
  - Clear
  - Focused
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# Integrated supplier



## Total supplier within mechanical completion / commissioning

### Mechanical completion

- Nitrogen services
- Pressure testing
- Hot oil flushing
- Chemical cleaning
- Bolt tensioning
- Preservation

### Maintenance / certification

- Composite repair services
- Hot Bolting
- Certification of accumulators
- Maintenance of heat exchangers
- HVAC cleaning

### On-site machining and cutting

- Flange Machining
- Plain- / key milling
- Hole- / line boring
- Mechanical cutting
- Diamond wire cutting
- Abrasive waterjet cutting

### Pipeline subsea services

- Pigging
- Flushing
- Leak testing
- Dewatering
- Gel filling / waxing
- Umbilical testing

### Decommissioning / removal

- Cleaning
- Passivation
- Cutting

### Well services

- Cuttings Transport
- Nitrogen lifting
- Well integrity testing
- Scale inhibitor squeeze
- Acid stimulation services
- Temporary water injection

### Inspection

- Video inspection
- Tank inspection
- Inspection pressurized systems
- Drone- / RPAS -/ UAV inspection

### Cleaning

- Cleaning in place (CIP)
- High pressure cleaning
- Tank- / vessel cleaning
- Vacuum cleaning
- LRA / NORM handling

### Rental

- Pumps and tanks
- Inspection equipment
- Bolt working equipment
- Flanges and plugs
- Air compressors
- Testing equipment
- Hydraulic hose reels
- Hot water cleaners

### Training courses

- Bolt tensioning (NS-EN 1591)
- Valves
- Pressure testing
- Tailor made courses

## Locations

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# Engineering/ project- management



# Personnel and manning

IKM Testing has long and extensive experience in project management and project execution. We have through many years built up a large staff of project managers and engineers with multi-skilled competence – both theoretical and practical- within all our services related to the oil and gas industry.

**IKM Testing would like to highlight the following:**

- Project management
- Project coordination
- Work planning
- Preparing of work packages
- Preparing procedures
- HSEQ management
- Planning and execution of large multidiscipline projects both domestic and internationally.
- Technology implementation and development (R&D)
- Shut down (TAR) planning and coordination

IKM Testing's key personnel are often integrated in our clients organizations for shorter or longer periods, contributing with their competence to the projects.

Furthermore, IKM Testing can offer total concepts within project execution and project management both domestic and internationally. In such cases our project managers act as single point of contact to our clients. The same model can be used for multi service projects as well – also incorporating other IKM companies and sub-contractors into the IKM Testing project organization under one project manager.

IKM Testing has participated and performed services in all parts of the world. This has provided us with valuable experience while working with different cultures, organizing local resources and resulting in a high international competence to our organization and personnel.

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IKM Testing offers experienced personnel for hire, with documented high competence and multi-disciplinary skills within our line of trade. We endeavour to accommodate the client's needs and deliver swift and flexible. The hire period may vary from a few days to several months.

IKM Testing works continuously to improve itself within traditional and newer business areas, and we focus on development as an attractive employer. This contributes to the fact that we have many skilled workers and specialised personnel within a wide range of disciplines.

IKM Testing has the largest equipment range within testing, cleaning and inspection for pipeline, mechanical completion and commissioning services. We deliver rental equipment on a large scale for industrial work, shipping, onshore and offshore activities.

IKM Testing performs continuous upgrades of existing equipment and invest in new equipment, hence we will always cover the market's needs, and at the same time be in compliance with the governing standards and regulations for certification of equipment.

#### Internet

More and more of our clients see the benefits of being able to look up the appropriate equipment within our range of equipment for hire, which is made available online along with the technical datasheets for the equipment. If you're on the look out for equipment within testing, cleaning or inspection, we recommend a search at:

[www.ikm.com/equipmentcatalogue](http://www.ikm.com/equipmentcatalogue). Our stock of rental equipment is one the most complete ranges in the market.

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## Rental equipment



IKM Testing has its own approved training and education centre. The centre contributes in reinforcing IKM's competence, while also offering courses to our clients.

The courses are held either at Sola, Bæreheim or locally at our clients.

#### Bolt working services course

IKM Testing's training and competence centre is approved by OLF for education and certification of personnel in bolt working services and valve technology. The main objective of the training is to provide basic knowledge in preparation, planning, execution and documentation of work with flange assembling using bolt working for flange connections on high pressure systems and hydrocarbon carrying process systems. Controlled tightening of flanges, the right choice of equipment, gaskets, bolts and lubricants is vital to avoid accidents and loss of values on pressurised facilities.

#### Other courses

IKM Testing has extensive experience in providing courses and training within services such as pressure testing, oil flushing and hydrojetting. We offer the client a thorough technical introduction into the subjects, together with the relevant HSE topics within each subject.

All our courses are documented with diplomas.

## Training/ competence centre





# Nitrogen services

## **Leak testing / N<sub>2</sub> pumping / purging**

IKM Testing provides nitrogen/helium (N<sub>2</sub> / He) commissioning leak testing and other associated nitrogen services on any pipeline or process system during construction of new plant or equipment.

These services can be provided during the commissioning phases of new constructions or following modification and upgrade to existing process piping or plant. These services can also be provided to production installations offshore and to petrochemical, refining and process plants onshore.

IKM Testing has developed into one of the leading companies for the provision of nitrogen helium testing and have extensive stock levels which include pumps, tanks, vaporisers and other ancillary equipment. All equipment is certified for both onshore and offshore operations.

## **Pipe freezing**

IKM Testing can perform pipe freezing/ice-plugging both onshore and offshore. Our approved methods allow freezing of many materials and have been tested thoroughly.

Being able to monitor and control both pressure and temperature, safe barriers can be established in new parts of pipe systems. This renders possible installations, modifications and maintenance when system upstream ice plug is still in service.



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## We perform:

- N<sub>2</sub> / He leak testing services
- Nitrogen pumping / testing
- Nitrogen purging
- Nitrogen generation
- Pipe freezing
- Foaming
- Preservation

# Plugging/ testing

## **Pressure/Vacuum testing**

IKM Testing performs testing by either vacuum or pressure to prove the integrity of the system ensuring the system is 'fit for purpose' and to obtain the relevant necessary certification. These procedures can be functional on system components such as pipes, tanks, valves and other equipment.

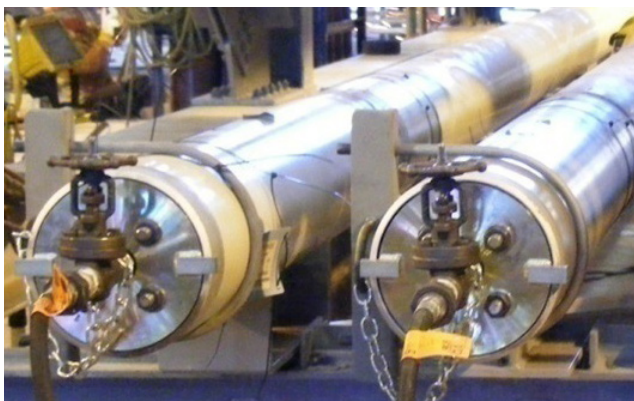
The operation is performed using fluids (liquid or gas) and all metering instrumentation is supplied with relevant traceable certification of calibration and documentation packages.

During testing the pressure will be visible on gauges, and logged on data, fuji, or mechanical logger.

## **Plugging technology**

IKM Testing has delivered plugs and joint testers for several years. We offer pipe plugs and pressure testing tools to greatly simplify and speed-up pressure testing of piping, tubing, pipe & tube systems, pressure vessels and a multitude of special applications.

In addition IKM Testing offers development, manufacturing and marketing of highly engineered products and repair services for shell & tube heat exchangers, condensers, coolers and chillers.



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## We perform:

- Pressure testing
- Vacuum testing
- Annulus testing
- Plugging services

# Cleaning

The presence of internal scale and its removal is a major challenge in process systems and its ancillary equipment. IKM Testing is working proactively together with its customers to find an effectual manner of solution.

## **Chemical cleaning**

IKM Testing's methods are evolved to meet the highest demands of environmental legislation, and the products we use have been created to meet present day requirements. Our chemical cleaning methods can also be utilised where there has been the potential of LSA/NORM polluted scale and during decommissioning activities.

## **Oil flushing**

Cleanliness of systems is paramount prior to production and certification of cleanness is essential during the construction/ commissioning phases of any project. Typically systems such as lube oil, BOP, Wellhead Control and umbilical all require certification of cleanliness.

## **Hydrojetting**

Machinery and ancillary equipment that uses water as cleaning/ flushing fluid can be supplied to accommodate the internal cleaning of pipe lines, piping, vessel and tank systems.

## **HVAC cleaning**

IKM Testing can provide simpler and more efficient methods to HVAC cleaning than what is traditionally used. New methods are developed based on environmental requirements, safety, efficient execution and documentation.

## **Tank-/Vessel cleaning**

IKM Testing performs cleaning of tanks offshore and onshore, cleaning of ballast tanks when damaged, large storage tanks for decommissioning and daily cleaning of tanks onboard supply vessels.

Vacuum Tank Cleaning System (VTCS) has a series of advantages compared to traditional tank cleaning. The method requires less time and simplifies both the work and the waste management.

## **Preservation**

IKM Testing provides all services required in the performance of this work from planning, front-end engineering, formulation of manuals, purchasing of preservation materials and the provision of preservation services to the customer.

## **Decommissioning**

IKM Testing has extensive experience in the removal of hydrocarbons prior to shut downs and during decommissioning/ cessation activities.

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## We perform:

- Cleaning in Place (CIP)
- Chemical cleaning
- Steaming with chemical injection
- Oil flushing / oil cleaning
- Hydrojetting
- HVAC cleaning
- Tank- /vessel cleaning
- Preservation
- Decommissioning
- LRA/Norm handling





All inspections can be documented with associated verification such as; photographs, CDs, videotape or other PC related software.

IKM Testing can assemble inspection equipment to meet any customer's specification.

#### **Video inspection**

IKM Testing performs internal visual inspection to any of the following components: Process piping, HVAC ducts, water pipes, heat exchangers, valves, risers, process and any other specialized equipment. Video inspection makes it possible to reach awkward accessible places like pipes and tanks.

#### **Tank inspection**

Automatic system enables IKM Testing to perform inspection of large tanks without entering.

#### **RPAS / UAV / Drone inspection**

IKM Testing offers Remotely Piloted Aircraft Systems (RPAS) for inspection. This gives ability to quickly deploy a RPAS inspection team both offshore and onshore in a safe and effective manner. The information collected can be analysed in-house by experts to make fact-based decisions, crucial in safety and time-critical situations.



# Inspection

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## We perform:

- Video inspection
- RPAS / UAV / Drone inspection
- Tank inspection

# On-site machining and cutting

## **Cold cutting**

IKM Testing's wide range of portable cold cutting and bevelling equipment is designed for rapid, accurate and repeatable on-site cutting performance. The split frame design of the portable clamshell lathe allows the machine to separate and mount around the OD of the in-line pipe/tube for stable and secure clamping.

The clamshell machine is capable of operating in specially tight or low clearance situations, even where it's not possible to use alternatively cuttings methods. Clamshells perform precision cutting or simultaneous cutting/bevelling operations, as well as weld preparation and counter boring on open ended pipe. Simultaneous cutting and bevelling capabilities improve the quality and is time saving compared to traditional cutting methods.

## **Flange facing**

IKM Testing has state of the art equipment from leading and superior suppliers, enabling us to perform high quality on-site machining repairs.

Flange facing is applied to repair damaged flanges either during construction, installation or from corrosion on existing pipe systems. Our portable and lightweight machines can be installed both internally and externally and provides the highest standards and tolerances. All types of flanges (including compact flanges) and materials can be re-faced to original specifications on-site.

## **Hot-/Cold tapping**

IKM Testing offer Hot-/cold tapping to provide a branch connection, or in preparation for both temporary and permanent linestop and bypass operation.

The equipment can be supplied as manually or air driven tools.

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## We perform:

- Flange Machining
- Plain- / key milling
- Hole- / line boring
- Mechanical cutting
- Diamond wire cutting
- Abrasive waterjet cutting



# Certification/ maintenance

## **Certification of accumulators**

IKM Testing performs certification and re-certification of accumulators. We dismantle, inspect, clean, test, function test and reinstall all types of accumulators. We also have a well-established contact network for delivery of parts for the most familiar brands.

## **Maintenance heat exchangers**

A heat exchanger is a critical component in many processes. IKM Testing has developed methods that enable a large extent of In-Situ (on site) cleaning, inspection and maintenance with minimal reaching time. Pro-active measurements implemented on entire systems help prevent down time and will ensure system integrity between planned maintenance and inspection intervals.

## **On-site PSV calibration**

Most PSVs require regular inspection, testing and calibration. IKM Testing has fully loaded PSV Calibration containers available. With well experienced Technicians we carry out the complete calibration and testing process at client site. Any sized business, in any location - we will come to you and take care of your testing and calibration onsite and efficiently.

## **Flow coding / Labelling**

Colour coding/flow coding ensures quick recognition of medium and flow direction for any system.

IKM Testing can plan, procure materials, perform and document the actual performance as part of our core business area. Planning and performance is according to appropriate standards or clients specific requirements.



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## We perform:

- Certification of accumulators
- Maintenance heat exchangers
- On-Site PSV calibration
- Flow Coding / Labelling



# Flange work

## Flange management

IKM Testing works with our clients to design safe, leak free, and consistent bolt loads prior to shutdown or during construction projects. This process often requires detailed flange stress calculations as well as identifying any tooling requirements, special procedures and training that may be required.

Possible other outputs can include reviews of lubricant coefficients, gasket types and bolt loads.

## Bolting work services

IKM Testing has extensive experience in the execution of controlled tightening to any bolted joint and the provision of mechanical joint integrity. Our skilled technicians will provide a leak free joint on process system connections and offer the added assurance of a leak free start up.

IKM Testing provides improved methods for the tightening of bolted flange connections. These methods of tightening are essential for systems that are exposed to severe operating conditions or where a correct stress distribution in the bolted joint is required.

## Hot bolting

Hot Bolting is the sequential removal, cleaning and replacement of bolts in a flanged joint, while the system is pressurized.

Although most flanges are designed to keep integrity in case of removal of one bolt, this requires that the remaining bolts are of such quality that they can sustain the connections total loading and maintain the gasket stress. This requirement can seldom be verified for connections in need of Hot Bolting; thereof an external barrier is needed.

IKM Testing performs bolt replacement with tools designed to establish a safe barrier.



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## We perform:

- Flange management
- Bolting work services
- Hot bolting

### **Pigging / Pipeline services / RFO / PCO**

IKM Testing performs all services related to pre-commissioning and commissioning of pipeline systems, including maintenance of existing pipes and pressure systems.

We work actively together with our clients to find optimal technical solutions, accommodating efficiency, environment and economy.

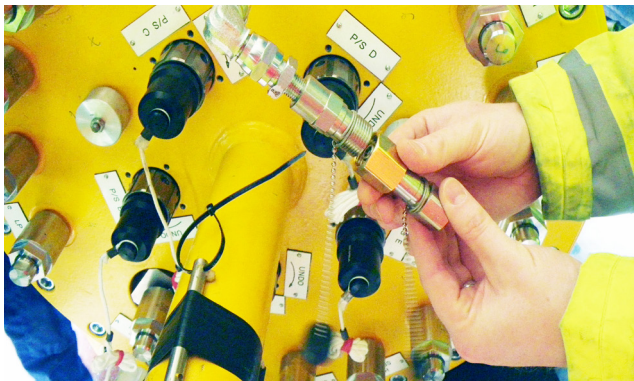
In addition, IKM Testing also performs FEED studies in the design phase of subsea development projects, which include – in addition to a description of how the pre-commissioning operations can/should be done for that specific system – functional requirements for e.g. pig traps, connection points, dimensioning of piping and valve placement.

### **Umbilical testing / cleaning**

IKM Testing performs all services related to pre-commissioning and commissioning of umbilicals. This includes flushing and testing of hydraulic lines, Electrical cable testing (IR,CR,TDR) and optical fibre testing (OTDR)

### **Onshore testing/FAT**

All services related to mechanical preparation and completion to pre-commissioning and commissioning of tie-in spools, templates, manifolds and other structures, are within IKM Testing's core business activities. This includes services such as flooding, cleaning, gauging, pressure testing, dewatering, drying, preservation, pig placement, waxing and gel filling.



# Pipeline services

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## We perform:

- Pigging / Pipeline Services / RFO / PCO
- Umbilical testing/-cleaning
- Subsea spools commissioning
- Subsea templates/Manifolds FAT
- Pig Tracking / Isotope services

# Well services

## Cuttings Transport System (CTS)

IKM Testings Cuttings Transport System (CTS) is being used by a large number of operators and installations. The system provides a well proven and tested mean of transporting the drill cuttings associated with the top hole drilling.

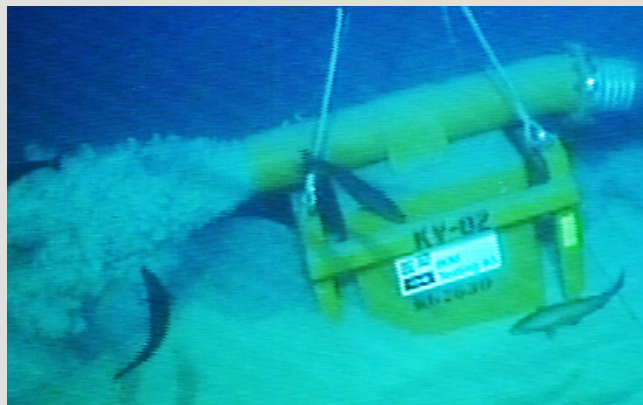
The systems are mobile and built according to industrial standards and can be adapted to suit most installations, vessels and drilling methods/ operations.

## Well pumping services

IKM Testing has several years of experience from Hybrid Pumping Services in the North Sea. Our personnel, both onshore and offshore, are very experienced in these types of operations where pumping operations is performed onboard platforms and from vessels.

IKM Testing offers a full range of fluid pumping equipment performing a variety of pumping services whilst comprehensively enhancing the planning, execution and reporting of such activity.

This also covers mixing/handling of chemical and fluid injection.



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## We perform:

- Cuttings Transport
- Nitrogen lifting
- Well integrity testing
- Scale inhibitor squeeze
- Acid stimulation services
- Temporary water injection



IKM Testing is established with departments at all the major offshore bases in Norway. All our departments have well developed workshops/test halls with solid experience and competence. Our large equipment stock makes it easier to mobilise on short notice.

IKM Testing can take full responsibility for multi-discipline projects including engineering, procurement, installation, testing, cleaning, inspection etc. We have developed facilities and services for one-stop-shop. The pipelines and process systems are returned fully cleaned, certified and documented.



## Workshop services

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### We perform:

Most of the services we perform on site, can if appropriate, be done in our test halls. Typical services we offer are:

- Testing and cleaning of prefabricated spools
- Certification of accumulators
- Cleaning and inspection of process equipment (hydro cyclones, filters etc.)
- Testing, cleaning and replacement of fluids in service lines etc.
- Cleaning and drying of oil (removal of water and particles) of all oil types
- Automatic pig cleaning system
- LRA/Norm treatment



*Our focus is growth!*

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