



SERVICE PARTNER OFFSHORE, INDUSTRY & PROPERTY



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## About KTV Group

KTV Group is an ISO certified service partner for offshore and land based industry. Since 1992, KTV Group has specialized in professional high pressure jetting and surface treatment, and our experience makes us very versatile and adaptable.

The fact that we are adaptable and have skilled and experienced staff allows our business today to embrace a lot more areas than it did in the early years. Our main areas currently include industrial cleaning, tank cleaning, coating, pipe flushing, pipe inspection, pipe renewal, NDT, gas monitoring/inspection, rope access techniques, high pressure cleaning, facade cleaning, graffiti removal, ventilation, waste management & hazardous waste. We perform cleaning according to the NS-INSTA 800 standard during construction of new rigs or ships, and/or during repair or maintenance projects.

KTV Group's quality and environmental management system is certified according to ISO 9001, ISO 14001 and OHSAS 18001.

In Norway you'll find KTV Group in Bergen, Stavanger and Oslo. You'll also find KTV Group in Nigeria., and we are present in Brazil and Iraq, in dialogue with potential partners.

All company information is archived electronically and all logging of accidents and non-conformities on procedures is done on the Intranet or via mobile units with access to the internet. The end result is an HSE system which is always updated and accessible, regardless of wherever our personnel may be in the world.

Our customers can follow their projects in real time / direct through their own unique weblink that is automatically created for each project conducted by KTV Group. Project information, daily reports with pictures and / or video, personnel information, information about equipment, checklists, quality controls and more are available through the same weblink.

### **KTV Group focus strongly on research and development.**

For many years we have developed new systems and equipment for making each day safer for our employees, without affecting their efficiency. The fresh air mask Freshcom, our remote controlled industrial cleaning robots, AQ Monitor air/gas monitoring and our research on NDT are good examples that we are at the forefront when it comes to innovation, safety and efficiency.

### **Our employees and work environment.**

A good, stable and safe working environment is very important to us, and all our employees are highly valued by the company. A good working environment will also ensure a good work ethic and a good service factor.

Our employees have a high level of quality and experience. They are all specially trained and educated within our business. Transfer of experience and knowledge are very important factors for us.



KTV Group is certified according to:

ISO 9001

ISO 14001

OHSAS 18001





## NS-INSTA 800

**Cleaning according to the NS-INSTA 800 standard is essential to safeguard quality during new construction.**

The standard helps preventing the possibility of injury to the personnel and also ensures quality of the work performed.

In an early phase of construction of new structures, it is important to maintain control of waste and dust. At this stage one should also monitor air quality. To document the work underway, it is the visual inspection that are logged in reports with text, video / images. One also takes measurements in air to ensure quality for operators in the working area.

Once the construction is nearing completion, the areas are divided and each area is protected for further contamination. In this phase there is normally stricter protection for shoes, and imposing vacuuming for all tools and equipment. The cleaning is now moving into another phase and other routines apply, with more use of washing with water, soaps and disinfecting chemicals.

The last part of the construction process involves a full washdown of all surfaces and pipes and especially the ventilation system. Under construction the ventilation system will be subject to high humidity and a lot of dust, and there will be a need for a important cleanse during the

washdown. The most important reason for the cleansing is the risk of the formation of bacteria, that later can cause health problems in subsequent stay in the same environment.

During the full washdown we are required to do sampling to be able to document the degree of purity according to customer specifications. We use special tape and special measuring equipment to check and assure that the quality meets the requirements. The challenge in this period of the project is to keep the areas free of work.

During the whole process it is very important to document the cleaning from beginning to end. All documentation required solved with our unique quality BlueTag. Via BlueTag the customer gets daily project reports updated with pictures, measurements and documents. Everything is accessed through a link stored on-line.

Steam, vacuuming, high pressure flushing, manual cleaning and special equipment for ventilation cleaning, are equipment that is mostly used in this type of cleaning projects.

Often, during the construction of ships and rigs, rope access techniques is used, especially the in the last phase of the construction.







## Ventilation

Cleaning of ventilation systems is the key to fresh air. All ventilation systems should be cleaned every 6 years. This is because the pipes accumulate deposits in which microorganisms such as fungus, mould and bacteria can grow.

Most people are very surprised to see what their pipes look like after just 6 years. If pipes are left uncleaned for 10-15 years, it may well be worth checking sick leave statistics. A large part of the problem will, in all probability lie within the ventilation system. Other indications are large amounts of radon and fungus spores in the air.

KTV Group uses a method which gives 100% clean pipes. Our supplier of equipment puts it this way: "Most manufacturers of equipment for cleaning ventilation pipes sell equipment to give the customer a clean conscience. We, on the other hand, develop equipment which not only gives the customer a clean conscience, but 100% clean pipes".

KTV Group always works to provide quality assurance for our customers. That's why we use the most effective and modern equipment on the market, for which every single metre is documented. We also offer maintenance agreements, in which we quality control your pipes every 3 years, and clean them as required. The inspections and work is documented to our customers with video and images.

Services we provide include:

- Cleaning ventilation systems and pipes
- Inspection
- Sealing leaks
- Disinfection

*(Extract from the Byggforsk report from SINTEF Building and Infrastructure, a leading international research institute.)*

*Studies have shown that contaminated ventilation systems can pose a hygiene risk, and result in reduced air quality and for small quantities of air. Accumulation of dirt on components such as fans, heating / cooling coils and heat exchangers can provide poor energy efficiency. Dirty ducts can lead to increased risk of fire and fire spread. There is evidence that cleaning of canals and generator components can lead to improved perception of the indoor environment and reduced the incidence of disease symptoms associated with poor indoor air quality. Ventilation systems can have an internal surface area of almost 10% of the floor area of a building, and constitute a large, hidden and often forgotten surface. The facility will provide sufficient quantities of clean air to the premises and to remove contaminated air. Channels and components of ventilation systems will be contaminated during use, and require inspection, cleaning and maintenance.*



# SECURE GAS MONITORING

## WHEN WORKING IN TANKS AND CONFINED SPACES

KTV Group has been managing gas measurement in tanks for several years on rig classification projects. We have followed the development of requirements for gas measurement in tank and enclosed spaces up close. Today KTV Group have 15 certified gas certificate issuers.

In recent years, the demands have become greater in relation to the documentation of air quality. The industry has found that the need for documentation is necessary to ensure the safety of workers in these environments. But has the industry done enough?

Most areas have requirements for measuring every 6-24 hours, in addition to the requirements of personal measures on workers. KTV Group has over a long period of work and during many projects noticed the following problems:

- When working in tanks the environment changes quickly. If changes happens it doesn't help much if the gas measurements were taken an hour earlier.
- Individual monitors are often damaged due to stress from the work environment and can lead to a false sense of security for the worker.
- There is often a lack of individual monitors, or they are not used, even if the entry certificate requires so.
- There have been a number of cases where hot work has been initiated without a valid gas certificate.
- Gases from solvents, cutting torch or other hazards are not captured during work.
- The cost is high due to the cost of certificate per tank.
- No quality control on the documentation of the air quality in the tank if there is an accident.

KTV Group's development section has for six months been working on a solution to all these challenges, and now we will present a method that solves them all.

### Introducing the AQ MONITOR system

The AQ MONITOR system measures the gases in the tank/confined spaces continuously 24 hours a day.

- No individual monitors necessary.
- The system also measures vapors from solvents/flame cutting.

- The cost is reduced.
- Complete measuring history during the entire period.
- Sensors tailored to customer requirements.
- All readings available live online (web).

### So how does it work?

**No 1.** Planning. Usually we know the scope of work before the rig is docked. Therefore the number of sensors can be mobilized and ready before the rig docks.

**No 2.** Placement of the monitors. Our coordinator ensures placement of monitors in all places where work will be carried out. This is done in cooperation with the rig management.

**No 3.** The monitors will stand on the outside of the tanks. When the values exceeds the assigned values, the monitor will make an alarm sound and the warning light signal will start blinking. The guard can start to evacuate the tank or confined space immediately.

**No 4.** The measurements starts and the certificate issuer puts the appropriate certificates on all measuring locations. The certificate is valid until there is an alarm. When an alarm goes off the certificate issuer will take the appropriate action and then he will re-certify the entry certificate.

**No 5.** In our control center we monitor all measurements 24 hours a day. Our on-site coordinator is in contact with the control center if incidents should occur. The control center will report to the customer.

**No 6.** The customer can follow all the monitors measurements via web if desired. The control center ensures that the documentation is satisfactory. If there is network problems and the control center loses contact with the network, the on site certificate issuer also has a portable monitor to capture alarms.

**No 7.** Project ends. KTV Group stores complete history of all measurements and monitoring on the web. These data will be available for the customer as long as the customer desires - even after the project has ended.

### Locations

We perform these services world wide.



- 24/7 LIVE AIR QUALITY MONITORING
- Simultaneous monitoring by global teams
- Remote monitoring of wide areas
- Lower deployment costs
- Increased situational awareness
- 24/7 datalogging of exposure conditions
- Early warning and tracking of hazardous threats
- Ideal for rapid deployment situations





## Gas certificate issuers

KTV Group has trained personnel to be able to certify all types of gas tanks. Our staff has many years of experience from working in tanks and holds an authorization certificate class A.

Safety officer /certificate issuers are registered as official certificate issuers at the Norwegian Labour Inspection Authority. The requirements are specified in:

- Regulations for Working in Tanks § 28
- Regulations on neutral gas

## Tank inspectors

KTV Group has staff who are specially trained and certified to approve tanks. Our personnel are highly qualified with years of experience in this area. All tanks should be regularly checked and approved. Contact us for agreements that addresses cleaning and approval in a single operation. We offer this service all over the world.

Our personnel have all documented relevant experience for at least 1 year, have taken Course B, including the examination.

**The requirements are documented in:**

- KLIF: Regulations to prevent leakage from oil tanks
- DSB: Regulations on hazardous substances.

## Fire, confined space entry and security guard

KTV Group has special trained personnel for fire, confined space entry and security guard missions. This personnel has special training and experience from rigs and ships. We also have our own coordinators who can manage larger projects. We have extensive experience from working in tanks, and many of our guards have themselves done work in tanks, which strengthens our expertise in security and safety around such work. We deliver on short notice regardless of the number of guards.







## High Pressure Robot ‘No Entry System’

KTV Group wishes to remove the need for personnel to enter tanks, and we know in the future tank cleaning will be performed without entering personnel. Our focus now and going forward is ‘No Entry’ flushing robots.

- The robot can be controlled remotely without entering the tanks.
- Solves the job without scaffolding.
- Can be used on both horizontal and vertical surfaces.
- The implementation process is reduced by 35%.
- The water consumption is reduced by 15-20%.

The robot climbs on steel with help of magnets, and can operate high pressure up to 3000 bar. Use of the robot also resolves the danger of personnel operating equipment over 800 bar. The robot is also used for the removal of surface treatment.

## Nanotechnology

KTV Group has a basic rule that we should be at the front when it comes to research and development of new products and services in our business. We are not afraid to develop or adopt new technologies in the early stages.

Beacuse of this we are delivering a maximum and optimum service to our customers and in many cases we make the workplace safer, and for the customers we save costs by using new methods and effective products.

Some of the benefits of using nanotechnology:

- Prevents dirt adhering to the surface in tanks
- Provides protection from marine fouling growth
- Provides protection against corrosion
- Treatment of facades so they will not fade or become dirty

## Specialists in tank cleaning

KTV Group has performed tank cleaning since 1992. Since then we have designed and developed special equipment to perform the work efficiently, safely and with high quality. From early on we had an mandatory requirement for the use of fresh air masks when working in the tank, regardless of tank content.

The future of tank cleaning is without entry of personnel, and KTV Group takes this seriously. Our goal is to be the world's leading and largest in tank cleaning within 2022.

Our focus now and going forward is ‘No Entry’ flushing robots. The robots are able to perform tank cleaning with minimal use of operators inside the tank (so called No Entry system). Before starting a tank cleaning assignement with flushing robots, we send the equipment needed for the job in specially equipped containers

directly to the jobsite. On the jobsite the equipment is installed and set up by our operators or local labor. When everything is installed and set up the washing operations are controlled via the internet from our control center in Norway. In the control center our specially trained operators safely perform complex tank cleaning assignments. In this way we can perform efficient and safe tank cleaning anywhere in the world. The robots are of course EX-certified.

Before starting an assignment our customers get their own unique web link where they can pursue the jobs live and also see the finished result. All documentation and reporting of the work is logged on the same side, and the information is available online 24/7 for all our customers.

The robots can also check and measure steel quality and check for damages while it is flushing. Other information such as type of waste, quantities etc. is also logged.

KTV Group also has regular tank cleaning personnel. KTV Group has extensive experience in tank cleaning, and all of our operators have special training in this field and are certified to all applicable standards and regulations. We have the best equipment, and our experience and established techniques are key features to accommodate the increasing quality requirements of our customers.

We clean all types of tanks, from 10m<sup>3</sup> to 35 000m<sup>3</sup>. The jobs are normally performed onshore and offshore on vessels, rigs and refineries.

### **The robot can be controlled remotely via the Internet.**

This means that we can control the robot system from our control centre situated anywhere in the world, and remotely control and perform cleaning tasks, both onshore and offshore.

### **We perform:**

- Tank cleaning/ Tank approval
- Project planning and management.
- Gas metering, issuing of boarding passes with personnel with all the necessary certifications.
- Confined space entry certificates
- Inspection of tanks with highly experienced personnel and with red and blue tank certificates (tank inspectors) / A and B authorizations.
- Cleaning with high pressure / steam at pressures from 200 to 800 bar and temperatures from 10 to 120 degrees.
- Assembling scaffolding.
- Drying as required. Mechanical and/or manual.
- Emptying and cleaning of dry bulk tankers.
- Removal and purification of waste water .
- Cleaning liners using self-propelled nozzle and video inspection if required.
- Flushing with robot - No Entry System.
- Waste management



# Pipe flushing, inspection, renewal and pipe agreement

## Pipe renewal

Pipe renewal is a collective term to rehabilitate pipes both inside buildings and homes, and in the municipal pipenet - from house to treatment plant. In many countries this is often referred to as "Relining". The principle is to repair the old, damaged pipes by creating new tubular steel panels on the inside of the old pipe. One major advantage of the pipe renewal is that in most cases we avoid digging up the outside area / garden, basement / bathroom or tear down walls.

Outside pipe renewal on municipal water and sewerlines is very commonly used and has a history back to 1977 (Oslo, Norway), where it replaced the replacement of aged and cracked pipes. Indoor pipe renewal (inside and under buildings) is a relatively new procedure in Norway. Every year thousands of residences and buildings in Norway have their pipes rehabilitated. The number is rising quickly, largely because of bad pipes installed in the early 1900s and until the 1970s.

*Why is there an increase in use of pipe renewal methods:*

- Lower cost than traditional pipe replacement
- Customized rehabilitation. Little / no noise, dust and other discomfort.
- Environmentally friendly (takes care of the resources that is being used)
- A large number of buildings and building areas were made in the 30's, 40's, 50's, 60's and 70's, and they all have old and bad piping systems, not designed to last indefinitely (many pipe systems are design to last maybe only 40-60 years).
- Pipe renewal protects against increasing water damage (increased by 330% since the mid 70's).

## Pipe agreement

It's easy. The pipe agreement gives our customers always clean pipes and in addition it includes rapid response if there is a need for cleaning/ opening of blocked pipes without extra charge.

By signing the agreement, all pipes are cleaned and inspected for damage. The jobs are documented with pictures / video and detailed report on a website and is available wherever you happen to be in the world. Samples are taken annually to avoid buildup of dirt that lead to clogged pipes. The contract period includes cleaning when needed.

The agreement ensures quality and prevents clogged drain pipes, as well as reduces wear and extends the life of the pipes. The agreement gives our customers a unique documentation against insurance companies and banks. Remember that the documentation will always be available and will never be deleted from our systems.

KTV Group is certified and approved by ISO 9001 and OHSAS18001 standards. Our personnel are trained in service and quality and we believe this is particularly important when performing this type of work such as inside private homes.

## Pipe inspection

KTV Group has equipment to perform inspection of all types of pipe, and we also have equipment to find / locate pipes underground.

We perform the following:

- General inspection
- The exact location of the fracture in the pipe.
- Video Documentation (recording)
- We can do up to 66m of pipe.
- Suitable for pipes down to 5"

## Pipe flushing

We have all the necessary equipment for pipe cleaning and inspection of all types of pipes. We have several mobile devices that can flush with both hot and cold water pressure from 300-800 bar. We also carry out inspection with robotics, and quality ensures all work done with videos and photos. Our personnel has extensive experience with clogged pipes of all sizes, and we have among other things our own tailor-made equipment for thawing frozen water / sewer.

Within industry and offshore, we have solved complex pipe flushing jobs where experience has been a necessity to solve customer needs.

We will always provide our customers with the best follow-up, also on special and challenging projects. One of the challenges we are working on is a machine that removes congealed mud in offshore ventilation pipes.

Aquamilling is one of the technologies used, and has proved very effective especially on scale in pipes.

- Thawing of frozen water / sewer pipes.

KTV Group has highly efficient equipment for thawing frozen water and sewerpipes. In recent years we have opened thousands of pipes to private homes and business. It's all about proper equipment, and this is where we specialize in using high pressure in combination with special nozzles and hot water.







## Surface treatment

**KTV Group performs:**

- Paint / spray paint
- Water jetting / high pressure cleaning
- Sandblasting
- Vacuum blasting
- Facade rehabilitation
- Dry ice blasting
- Brick and plaster work
- Inspection
- Project responsibility
- Rope access technique

KTV Group has extensive experience in surface treatment, and we have expertise with all types of surfaces. We focus on personnel with high expertise and we have our own inspectors. Our quality system is suitable for all types of jobs, whether it is surface treatment of a tower block or on a offshore installation.

**Painting**

We work closely with well known paint suppliers, with a focus on always providing the best solutions for our customers. Our property department has extensive experience in rehabilitation of apartment buildings, facade, terraced houses, stairways, and high-rise building. We have in recent years carried out major works in several housing associations and commonhold associations in Bergen. We are happy to assist our clients in cooperatives or commonhold associations with advice and information to residents. We have a well developed and well-functioning system for HSE / Compliance and quality control of performed skilled work. We produce work schedule for the project and is in active dialogue with the client's representative throughout the project. KTV Group also provides maintenance contracts for the exterior facades of 10-20 years.

**Industry & offshore**

We treat surface structures and equipment intended for offshore, energy and process plants. We have good solutions for covering work area, and

where access is a challenge, we use rope access technique. Good planning in terms of method and choice of products is essential to achieve good corrosion protection. KTV Group has expertise in all methods on the market. All work is quality assured with specific details and photos.

**Dry ice blasting**

Dry ice blasting is a revolutionary cleaning / blasting method where instead of traditional abrasives such as sand, water and chemicals, we are using soft dry ice shaped like rice grains. The process leaves no secondary waste. Dry ice blasting provides quick, efficient and gentle removal of soot, oil, diesel, grease, fouling, fouling, moss, algae, fungi, chewing gum, paint / graffiti and much more. Can be used for cleaning turbines, generators, electrical equipment and in the food industry.

**Wet blasting / sand blasting**

Wet blasting is an evolution of sand blasting, but wet blasting has the distinct advantage of not gathering dust. The method is very effective for removal of old coatings on both brick, stone and steel.

KTV Group also has methods for using vacuum blasting, thus regaining all the sand that is being used. This makes it theoretically possible to sandblast the inside of buildings or in areas where dust or water is a problem.

**Sand washing**

We use machinery at 4-500 bar pressure with special nozzles that enables injection of sand. The method is very often used on facades where it will remove poor surface treatment, but also for preparation for adhesion to the substrate. The method does not replace wet blasting, but it's another option where the surface will not be processed so thoroughly, or any surface treatment to be removed.

**Soda/chalk washing**

For soda/chalk washing, we use a high pressure washer at 3-500 bar with special nozzles injecting chalk. The method is used for cleaning special surfaces as Mineralitt, puss copper, or other surfaces that can not withstand chemicals, or where sand washing / blasting is too strong. This method is used especially on older plastered facades where caution must be exercised.





## Rope access technique

KTV Group is affiliated with Soft (organization for rope access techniques) and has its own security manager class A. We like to participate in the planning process to ensure the quality of work performed. Our climbers have extensive experience in buildings, constructions and industry and can perform a variety of tasks quickly and efficiently.

KTV Group has a dedicated team of climbers who have taken the approved access technique course. We have all the latest modern equipment within access techniques, which along with approved climbers means that our customers can have high quality work performed safely at the right price.

For example: we use electric rope crawlers to ascend and descend faster. This enables us to quickly cover large areas.

We can climb on just about anything, and our work is on- and offshore. On land, climbing has been perceived as dangerous and irresponsible for many years, whilst offshore, several hundred climbers work every day performing inspections, mechanical, surface treatment, cleaning and many other jobs.

KTV Group has special competence within climbing on buildings. Many companies can save time and money by using access techniques to perform relatively large operations. Examples include inspections, facade cleaning, window painting, installation of equipment, minor repairs, etc.

We specialize in high-pressure cleaning and surface treatment. We have developed our own equipment and techniques that allow us to work quickly and efficiently.

KTV Group has a strong focus on health, safety and safety on all jobs.

### **We provide the following services Onshore & Offshore:**

- Industrial cleaning
- Painting
- Inspection
- Assembly
- Surface treatment
- Mechanical work



## High pressure cleaning robot

KTV Group wants to remove the need for personnel to enter tanks, and we know that in the future, tank cleaning will be performed without entering personnel.

- The robot can be controlled remotely without entering the tanks.
- Solves the job without scaffolding.
- Can be used on both horizontal and vertical surfaces.
- The implementation process is reduced by 35%.
- The water consumption is reduced by 15-20%.

With the use of the robot, we can perform flushing on all kind of steel without the use of scaffolding or lift. The robot climbs on steel with the help of magnets, and can operate high pressure up to 3000 bar. Use of the robot also resolves the danger of personnel operating equipment over 800 bar.

### Very adaptable

It can be used on both vertical and horizontal surfaces. The robot is the result of many years of development, and is suited particularly well to work with tank cleaning and cleaning ships and rigs. The robot is also used for the removal of surface treatment.

For jobs inside tanks it is possible to control the robot from the outside, in other words a 'No Entry System'.

For land-based tank facilities the robot solves complicated cleaning tasks without the need of scaffolding, and thus reduced the need of personnel with 65%.

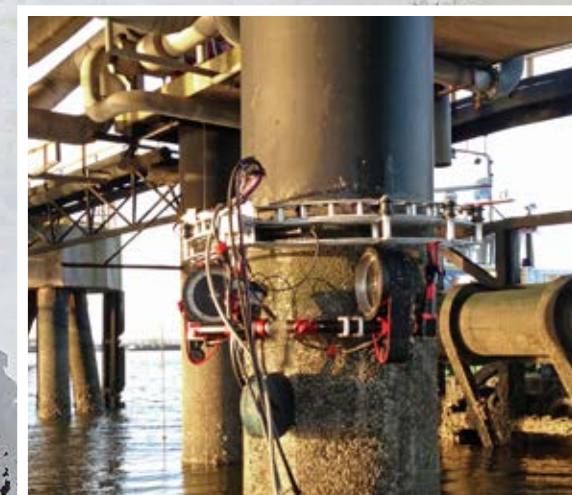
The robot is controlled remotely, it is effective, quick and can forsee curves. It works just as well up as down. Using auto programs, maximum efficiency is achieved. This reduces the implementation process by 35%.

There is also an environmental benefit with the saving of about 15-20% water usage.

### Remote control via the internet

KTV Group has developed the robot so it's possible to controll it remotely via the Internet.

This means that we can control the robot system from our control center situated anywhere in the world, and remotely controll and perform cleaning tasks, both onshore and offshore.





## Consultancy services and project management

KTV Group has led a range of projects within our industry since 1992. Our specialist skills within planning, logistics and practical implementation are high.

Planning is a key factor for limiting costs, ensuring quality and HSE. Our organisation has the skills necessary to handle all these challenges, whether working on a small project or a drilling rig in for an overhaul. Time is often a decisive factor, and this is where we have the greatest expertise. This comes from all of our consultants having extensive experience within our industry, and particularly because we can tackle work subject to tight deadlines.

## Development & new technology

KTV Group have for long time been at the forefront when it comes to research and development of new technologies that can improve the safety of personnel working in our fields, but of course also can be used by the adjacent fields.

Examples of future technologies is the fresh air mask Freshcom (info below), nanotechnology and the high pressure robot that provides us with a No Entry system.

### - High Pressure Cleaning Robot - No Entry System

KTV Group wants to remove the need for personnel to enter tanks, and we know that the future of tank cleaning will be performed without entering personnel. With the use of the robot, we can perform flushing on all kind of steel without the use of scaffolding or lift. The robot climbs on steel with the help of magnets, and can operate high pressure up to 3000 bar. Use of the robot also resolves the risk of injury in that personnel do not have to operate the equipment over 800 bar.

The robot is the result of years of development and it is particularly suitable to do tank cleaning and cleaning of ships and rigs. The robot is also used for removal of coating.

For tank work it is possible to control the machine from the outside, in other words a 'No Entry System'. Read more about the robots earlier in this brochure.

### - Nanotechnology

KTV Group has a basic rule that we should be at the front when it comes to research and development of new products and services in our business. We are not afraid to develop or adopt new technologies in the early stages.

Beacuse of this we are delivering a maximum and optimum service to our customers, and often we make the workplace safer, and for the customers we save costs by using new methods and effective products.

Some of the benefits of using nanotechnology:

- Prevents dirt adhering to the surface in tanks
- Provides protection from marine fouling growth
- Provides protection against corrosion
- Treatment of facades so they will not fade or become dirty

### - Freshcom

For many decades, personnel have been exposed to risk associated with working in tanks. Fortunately, it has lately become more and more common to use fresh air and filter masks when working in such environments.

KTV Group has recently been developing a fresh air mask that addresses all the challenges - fresh air, video transmission, communication, integrated lighting and eye protection.

We provide personnel within the following areas:

- HSE
- LOGISTICS
- MANAGEMENT / PROJECT MANAGEMENT
- QUALITY CONTROL
- DEVELOPMENT
- METHOD OF CHOICE / PLANNING

## Gas measuring in tanks confined spaces

Gas measuring is a service KTV Group has carried out for many years. In 2013, strict new laws and regulations will take effect, and this means stricter requirements for issuing gas certificates. KTV Group has 15 educated certificate issuers and we are highly specialized in this field.

Our section for development and new technology has been working on a new method for gas measuring/monitoring for a long time. This new method satisfies the new regulations and provides much better measuring than current methods. Safety is greatly improved and the cost is reduced. Read more about our service **AQ Monitor** on an earlier page in this brochure.

## NDT

NDT is an area section for development and new technology has work a lot with and we have already made great progress. Our goal is to be able to monitor and measure the quality of steel in tanks / structures daily, even with the waste in the tank.

Such a solution will mean big savings for customers with offshore structures / industry that have requirements for approval regularly.



FRESHCOM  
FRESH AIR - VIDEO - COMMUNICATION



Onshore & offshore

A selection of project on rig-fix on-offshore where we have performed CDB cleaning and/or HVAC cleaning

Oil rigsShips, PSV, ESV, AHTS

Scarabeo 5	Maersk Leader
Scarabeo 8	Maersk Lancer
Island Innovator	Mou Island Wellserver
FPSO BP Skarv	Island Frontier
Deepsea Bergen	Island Vanguard
Deepsea Atlantic	Havila Mars
Bredford Dolphin	Havila Flavour
Borgland Dolphin	Havila Crusader
Bideford Dolphin	Havila Foresight
Songa Dee	Havila Venus
Songa Trym	Bourbon Orca
Songa Delta	Bourbon Surf
Transocean Winner	Bourbon Topaz
Transocean Artic	Far Saranade
Transocean Searcher	Far Star
Transocean Leader	Far Sagaris
Safe Regalia	Far Saracen
Safe Scandinavia	Olympic Poseidon
Kvitebjørn (Statoil)	Olympic Promotor
COSL Rival	Skandi Admiral
Ocean Vanguard	Skandi Flora
Floatel Superior	Skandi Stolmen
West Venture	Skandi Møgster
Seadrill West Phoenix	Skandi Flora
Stena Don	Siem Symphony
Polar Pioner	Siem Pearl

A selection of Customers

YARA
Kaefer Energy AS
The Norwegian Military
Dolphin Drilling AS
Oceaneering AS
Transocean offshore
Saipem
Scomi Oiltools
Semco Maritime
Bergen Group
Coast Senter Base (CCB)
Vard group
SolidTech
IRM
Odfjell Drilling Technology AS
Wilhelmsen Technical solution
Axess AS
Cabot Specialty Fluids
Beerenberg
Petroleum GEO Services
IST Marine AS
OneSubsea Processing AS
Pipetech International
Maritime Consultants
Vaagebulk II KS
Bergenhus Shipping Services AS
SAR AS
Klimateknikk AS
Nomaco Services AS
Stavanger Engineering
Framo
NCC
Franzefoss
Ragn-Sells
Norsk Gjenvinning/Veolia
AF Gruppen
Mesta
Safeport AS

Property

A selection of property projects where we have performed cleaning and HVAC cleaning

Property and buildings

Løvåsen Borettslag
Toppe Borettslag
Frydenbø Eiendom
Sameie Rieber Mohn vei
Cabot Corp – Tank farm CCB
Jægers Brygge
Sameie Sandviksveien
Sameiet Nordnesbakken
Åsedalen Borettslag
Boligsameiet Røysvegen
Kyrresborg borettslag
Christineborg Borettslag
Sameiet Wolfsgate 12
Ulsmåg Borettslag
Rosenkilde Borettslag
Skjold Borettslag
Åstvedtvågen Borettslag
Varden Terrasse
Sameiet Sælen Terrasse
Strimmelen Borettslag
Sameiet Sandviken Brygge
Sponviken Borettslag
Øvre Våkleivåsen Borettslag
Natlandsveien Borettslag
Sandviksboder 1
Kalfarparken

A selection of Customers

Skanska Norge AS
OBAS Vest AS
JM Norge
BEFAS
Frydenbø Eiendom 1 AS
Amfi Drift AS
Bergen Kommune
Hordaland Fylkeskommune
Yara Norge
Helse Vest – HS
UIB – Universitetet i Bergen
Compower Eiendom
DNS – Den Nationale Scene
Bergens Tidende
Clarion Hotel Flesland
Havnekontoret
Bergen Fengsel
YIT
Bybanen
Fløybanen
Biltema
Vestlund borettslag
Lyderhorn Borettslag
Bohus Nordås
Sartor Senter
Sameiet Sandviksveien 94
IKEA (Elementrengjøring nye bygget Åsane)
Lerøy Vest
Statsarkivet
Bergen Arkitektskole
Åsegården
Stiftelsen Bymuseet i Bergen
Aberdeen Eiendomsfond Norge AS
Hartveit Eiendom
Kokstadveien Næringseiendom AS
Spectrum – Amundsen Eiendom
Norscrap West





## BlueTag

Quality and documentation system

BlueTag is an internationally recognized cloud-solution which provides open information about all our areas of responsibilities for all our projects. The system provides an overview of economic factors and it measures and documents QA and HSE – from production until delivery to our customers.

BlueTag reduces costs related to administration and accounting and sends immediate alerts about economic and project deviations. BlueTag is used throughout the KTV Group – all the way to the top. BlueTag meets the certification requirements in ISO9001, ISO14001 and ISO18001.

All our HSE data is recorded directly in our QA system. That means any undesirable incident that is recorded in the system initiates an immediate update of statistics in real time.

The quality assurance system is updated in real-time and linked to new laws and regulations, the records of substances, chemicals and products, checklists, HSE plans, the organization chart and our procedures.

### BlueTag Mobile app





# ES

All KTV Group employees live according to the saying "The YES people".  
We are and will be forthcoming in all situations.  
We have the unique ability that we don't see problems.  
We only see challenges, and we love challenges.  
We are "The YES people".

# LE

# KE

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