The World's "Coolest" Cutting-Edge Technology

Cut the Heat- Cut the Risk
Cut the Heat- Cut the Risk
RECENT U.S. ACCIDENTS INVOLVING CUTTING & GRINDING
Fires and explosions that occur in plants and oil rigs are some of the most devastating types of accidents that can ever occur. The injuries and property damage that can be sustained from an incident of this nature are extreme and can result in long-term consequences. Unfortunately, over the years, these have not been an unheard of occurrence.
Motiva Enterprises Sulfuric Acid Tank Explosion
Delaware City, DE

On July 17, 2001, an explosion occurred at the Motiva Enterprises refinery in Delaware City, Delaware. A work crew had been repairing a catwalk above a sulfuric acid storage tank farm when a spark from their hot work ignited flammable vapors in one of the tanks. This tank had holes in its roof and shell due to corrosion. The tank collapsed, and one of the contract workers was killed; eight others were injured. A significant volume of sulfuric acid was released to the environment.
Bethune Point Wastewater Plant
Explosion
Daytona Beach, FL

Two municipal workers died and another was seriously injured while attempting to remove a steel canopy above a methanol storage tank at the Bethune Point wastewater plant operated by the City of Daytona Beach. The workers were using a cutting torch that likely ignited methanol vapors from the tank and caused an explosion. The explosion led to the release of the total contents of the tank, approximately 3,000 gallons of methanol.
The explosion happened while the workers were performing hot work to disassemble the tank. Sparks ignited vapors inside the tank and caused the fatal explosion. The fire then spread to the woods nearby and burned into the evening.
There must be a safer way...

Some headlines are not worth making.
POTENTIALLY EXPLOSIVE ATMOSPHERES
<table>
<thead>
<tr>
<th>European &amp; IEC Classification</th>
<th>Definition of zone or division</th>
<th>North American Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 0 (gases)&quot;G&quot;</td>
<td>An area in which an explosive mixture is continuously present or present for long periods</td>
<td>Class I Division 1 (gases)</td>
</tr>
<tr>
<td>Zone 20 (dusts)&quot;D&quot;</td>
<td></td>
<td>Class II Division 1 (dusts)</td>
</tr>
<tr>
<td>Zone 1 (gases)&quot;G&quot;</td>
<td>An area in which an explosive mixture is likely to occur in normal operation</td>
<td>Class I Division 1 (gases)</td>
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<tr>
<td>Zone 21 (dusts)&quot;D&quot;</td>
<td></td>
<td>Class II Division 1 (dusts)</td>
</tr>
<tr>
<td>Zone 2 (gases)&quot;G&quot;</td>
<td>An area in which an explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time</td>
<td>Class I Division 2 (gases)</td>
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<tr>
<td>Zone 22 (dusts)&quot;D&quot;</td>
<td></td>
<td>Class II Division 2 (dusts)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Class III Division 1 (fibres)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Class III Division 2 (fibres)</td>
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</tbody>
</table>

**AREAS**

- ZONES-EUROPEAN & IEC METHOD
- DIVISIONS-NORTH AMERICAN METHOD
HISTORY OF EXPLOSIVE ATMOSPHERE TEST

GexCon Safety Tools Test

Experiments were performed in explosive atmospheres of the following mixtures:
- propane and oxygen
- acetylene and oxygen

The mixtures were measured to maximize combustion (stoichiometric), which is more sensitive to ignition than natural gas.

Grinding and cutting were performed on various types of steel over flammable hydrocarbons.

Direct grinding was conducted over the heated flammable hydrocarbons.

The End Result

NO IGNITIONS!
WHAT WE OFFER
Specialization of unique cold work surface preparation, grinding and cutting tools.
SOLUTIONS

Safety Tools has three categories of solutions:

- Cutting solutions
- Grinding solutions
- Creative, automated engineered solutions
TFT-Pneumatic’s Surface Prep Tools for use in Explosive Environments, Class 1, Div 1 & 2

Before

* These images show the surface prep provided by TFT-Pneumatic’s Tools for use in Explosive Environments. Classified as Cold Work No Hot Work Permit, No Shutdown.

Surface Prep SP-10

- Surface Profile 2.5 mils (40-75 microns)
- Pull test 1 - adhesive break @1,550 psi
  89% intermediate, 3% primer, 8% glue
- Pull test 2 - adhesive break @1,600 psi
  85% intermediate, 15% primer

The only tool of its class that can work in and around explosive environments while providing unrivaled surface preparation.

www.tft-pneumatic.com  713-686-9400
6807 Wynnwood Lane, Houston TX 77008
No need brute force, let the tool work for you
SAFETY

Our products have been safely used worldwide for over a decade, offering substantial health, safety & environmental benefits

- Equipment adheres to ATEX guidelines
- Safe for use **WITHOUT A HOT WORK PERMIT** in
  - Ex gas zones 1 & 2
  - Dust zones 21 & 22
  - US Market Class 1 Division 1 & 2
- Custom designed, certified pneumatic tools are safe for use in Potentially Explosive Atmospheres
DURABILITY

Files and discs are harder than an industrial diamond with specially designed cutting teeth.

- Low friction/low heat build up
- Long lasting durability
MAIN BENEFITS
- No Hot Work Permit
- No Hot Sparks

- No Habits
- No Fireguards

- No Shutdown

- No Job Delay

- No Health Issues

Get the job done safely, quickly, efficiently and on time.
GET THE JOB DONE SAFELY, QUICKLY, EFFICIENTLY AND ON TIME
COST CUTTING
CUT THE HEAT

CUT THE RISKS
- No sharp splinters
- Low heat
- Low vibration
- Low noise
- Easy clean up

CUT THE COSTS
- Eliminate the need for a Hot Work Permit
- Decreasing the risk of explosions
- Save on personal protective equipment costs
- Save follow-up costs
- Increased productivity
- Great reduction of flue gas
CUT THE RISKS

- No sharp splinters
- Low heat
- Low vibration
- Low noise
- Easy clean up
CUT THE COSTS

- Eliminate the need for a Hot Work Permit
- No demanding Risk Evaluations
- No job postponements
- Less follow up maintenance
- Increased productivity
- Great adhesion profile
CONVENTIONAL METHOD
VS
TFT PNEUMATIC'S METHOD
<table>
<thead>
<tr>
<th>CONVENTIONAL TOOLS</th>
<th>Cost (Job 1)</th>
<th>Cost (Job 2)</th>
<th>Cost (Job 3)</th>
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<tbody>
<tr>
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<tr>
<td>Ex</td>
<td>SAFETY TOOLS</td>
<td>Cost (Job 1)</td>
<td>Cost (Job 2)</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------</td>
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<tr>
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<td>Job Preparation</td>
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<td>Risk Evaluations</td>
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<td>Personnel Hours</td>
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<td>Clean up</td>
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<td>HAV Limits</td>
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<td>Hot Work Permit</td>
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<td>Surface Damage (Sparks)</td>
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<td>Health Issues</td>
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INDUSTRIES
WE
SERVICE
- Offshore platforms
- Oil & Gas refineries
- FPSO's
- Chemical processing plants
- Gas pipelines
- Military
- Maritime & Shipping
- Bridges
- Power Companies
- Grain handling & storage
- Nuclear

... our lists is continually growing
Companies that trust our technology
SAFETY TOOLS SOLUTIONS

Our Grinding and Cutting Solutions come safely packed in a custom Peli case lined with pink anti-static foam and include:

- DNV certification
- EC Declaration
- User manual
- Tools and accessories.
Certificates & Reports We Offer

Certificates & Reports
- DNV Grinding – Certificate & Report (T3)
- DNV Cutting – Certificate & Report (T4)

Testing
- Explosion – Gexcon
- Adhesion - Jotun, CorrPro, International Coatings
- Vibration - ATR Group
- Isocyanides – Institute for Chemical Analysis (Marianne Dalene)
- Noise - Multiconsult
We conduct training at our office in Houston year-round and offer onsite training.

We supply detailed user manuals, videos & maintenance material to ensure our clients have on-demand reference information.
"The work went really well with very low noise and very little vibration. We are all in all very satisfied with the tools – we saved about a week's worth of work."

Bjørn Erik Dahl Aker Offshore Partner, Material Coordinator

Aker Barents drilling rig - Photo Harald Pettersen - Statoil
“I never imagined in my life time that I would be able to perform the type of work that involves removing steel on an Offshore producing platform without throwing any sparks. These tools have allowed us to take construction to a new era in Safety”

Charles Munoz, GIS Project management Group – Gulf of Mexico, MAD DOG Offshore Platform – BP

Chevron GoM Platform – Photo Hector Maggi - Chevron
“In my 20 years' experience, I have never before seen a new tool that has shown such promise, radically improving the HSE situation at offshore facilities. Personally I think it should be mandatory.”

Halvor Erikstein, Norwegian Union of Energy Workers (SAFE)

Troll B platform – Photo Øyvind Hagen - Statoil
“The cutting system works excellent. We were able to cut out welds attaching equipment in an area... in one shift... without having to shut down the facility. Definitively a quality product and valuable asset.

Shell-MARS Offshore Platform, Gulf of Mexico

Mars Platform GOM – Photo info n/a - Shell
“The tools are used almost daily and there is minimal wear on the teeth. I see benefits in getting work done without much delays as I do not require hot work permits. All I require now is a blanket permit for the air compressors and my team can work on the individual lines. There are significant cost savings as we get much faster turnaround.”

Shell Eastern Petroleum, Singapore

Shell petrochemicals plant Singapore – Photo info n/a – Shell
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