

MORE BITE FOR YOUR MONEY

# THE RELIABLE BOLT-ON TOOTH SYSTEM



## KVX FOR MINING:

- **Wheel Loaders**
- **Underground Loaders**
- **Excavators**
- **Face Shovels**
- **Wear Protection**



# KVX – UNIQUE SOLUTIONS FOR A GLOBAL MARKET



The history of KVX dates back to the foundation of Kverneland Group by Ole Gabriel Kverneland who built his small forge in the village of Kverneland, Norway in 1879.

Today KVX is Norway's leading manufacturer of G.E.T (ground engaging tools) and a growing international player serving the construction, quarry and mining industries, while also offering products for a range of other severe industrial applications.

KVX GET systems provide innovative solutions to every day GET issues, using a unique Combination of features.

*Following are some of those features and the benefits they can offer to your operation, no matter what brand of loader or excavator you utilize at your site.*



1

## KVX Sagitta Bucket Lip Standard!

World-renowned Sagitta steel offers an unrivalled balance of "hardness" and "toughness". Sagitta's complex blend of alloying elements, and a specialised hardening process, result in consistent material characteristics throughout – through hardened to the core!

KVX products are rolled, forged or cast. The technology is chosen to optimize performance of each individual product.

### Advantages are:

1. Significantly Longer Bucket Lip Life (~500HB vs 250~400HB for most conventional Lips)
2. Stronger Bucket (toughness & tensile strength)
3. Far Less Maintenance & Downtime
4. Little Or No Lip Protection Required
5. Almost Zero Welding Maintenance
6. Truly "Smooth Floor" Design Inside & out (Optimal Penetration & Productivity)

4

## A bolt-on system that really lasts

KVX conical-neck, high performance bolts are tightly torqued into a threaded plate. They have a grip like steel and withstand the toughest terrain.



5

## Sagitta steel

At KVX we harden our steel after processing it. With 130 years of experience we have achieved the optimal Combination of hardness and toughness. Greater durability and greater life!



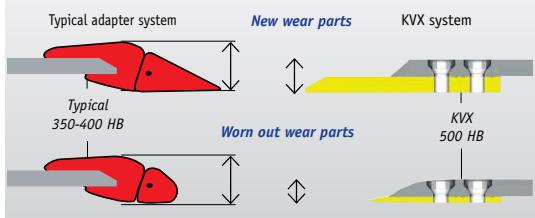
2

## Reversible, self-sharpening teeth and wear plates (certain applications)

When the teeth and wear plates have worn out on one side, you just turn them around and start on life number two!

3

## Slim, high penetration design



The KVX systems starts out slimmer than conventional GET systems and it's advantage improves even further as the components wear. KVX gets sharper with wear!

6

## Unique Welding Free Solutions!

Adapter repairs and poor tooth retention can constitute a significant ongoing expense, not to mention the damage caused to adapters or fixed plant when a tooth is lost. The KVX system completely eliminates these adapters and welding, due to the bolt-on technology.



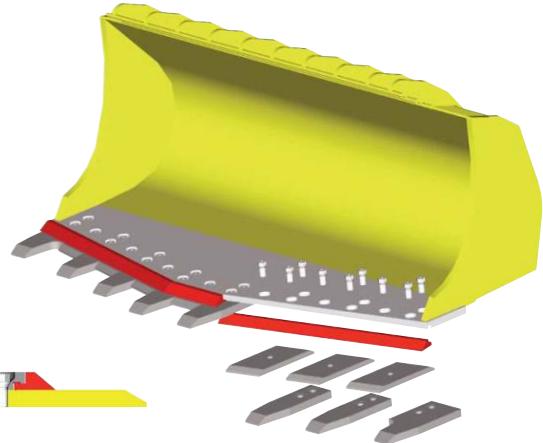
## WEAR PROTECTION

### FRONT PROTECTOR SYSTEM

The Front Protector has become very popular in conditions with high wear.

The Front Protector list is wedged between the lip and the bolt-on GET components (teeth or plate segments). A special bucket lip configuration is required, incorporating a machined "keyway".

The KVX Front Protector is manufactured from Sagitta® 540 Brinell grade steel. A complex blend of alloying elements, and advanced hardening technology, provide uniform hardness and toughness throughout, resulting in excellent wear resistance, and the ability to withstand severe impact conditions without the risk of cracking.



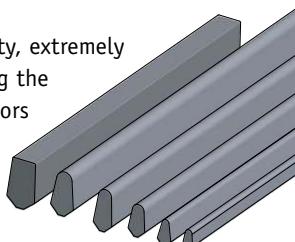
### WEAR BARS

KVX wear bars are used as protection on buckets, in dump truck bodies, and in a broad range of other applications where wear and impact protection is required. KVX Wear Bars are through hardened to 500 Brinell (HB).



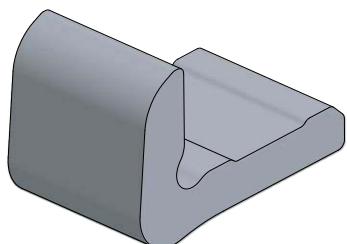
### GROUSER BARS

KVX Grouser Bars are 500 HB quality, extremely shock and wear resistant; providing the optimum solution for Crawler Tractors working on hard and abrasive rock surfaces. Their special design will ensure easy, quick and economical welding and provide superior penetration capabilities.



### HEEL SHROUDS

KVX Heel shrouds are designed to protect high wear areas, such as the corner edges on excavator, loader, face shovel and LHD scoop tram buckets. At 500HB, they are significantly harder than most cast welded alternatives.



# SYSTEM FOR WHEEL LOADER

**KVX supplies a Combination of cutting edges, wear plates and teeth to suit any size of loader up to 250 tons. Four different layouts are available designed to cover all applications including the most severe conditions. Standard components are used whenever possible, with tailor-made solutions developed for special requirements.**

KVX offers a bolt-on solution for maximum protection of bucket and tyres. With its unique, flexible and "flat-floor" design, KVX leaves a smooth, clean and level operating surface – a feature which provides a host of other broader benefits for your entire operation.



*KVX system with teeth, segments and front protector list for optimal wear resistance and penetration.*



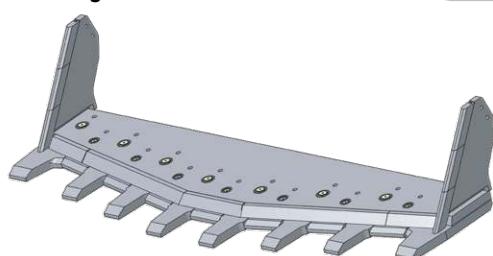
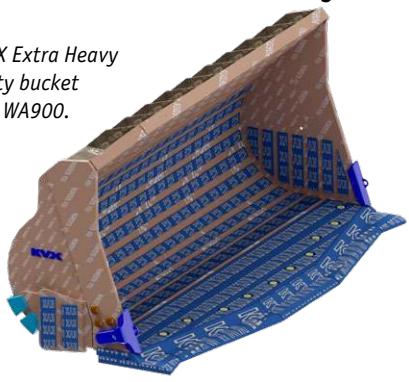
*KVX system for Limestone applications. Sharpened profile and a special heat treated steel alloy to avoid the crack-building process found in limestone.*

**The KVX bolt-on solution can be configurated to spesific site needs. KVX supply complete buckets as well as G.E.T. systems for any machine.**

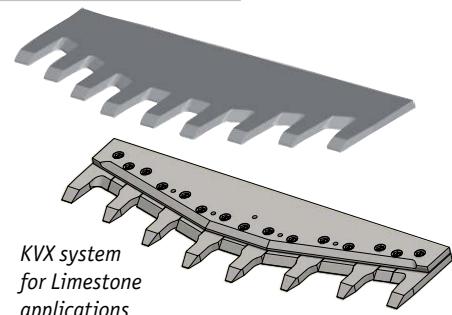
**WATCH MOVIE:  
Mounting of  
KVX G.E.T**



*KVX Extra Heavy Duty bucket for WA900.*



*KVX lip configuration for WA1200 in heavy duty applications.*



*KVX system for Limestone applications*

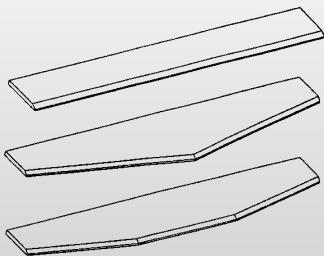
WATCH MOVIE:  
WA1200 with  
KVX G.E.T



**WA1200**  
Norway

### Cutting Edge without holes

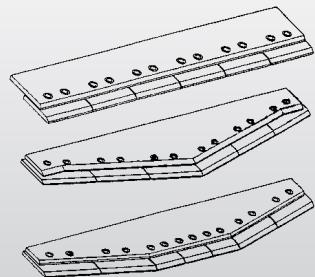
Straight, pointed, spade and profiled cutting edges without holes. Low weight and good penetration.



### Cutting Edge w/Wear Plates

Up to 120 ton wheel loaders.

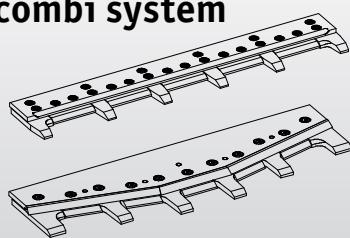
General purpose cutting edges in straight, pointed and spade edge configuration for sand, gravel and tunnel loading.



### Cutting Edge w/teeth and Wear Plates – combi system

Up to 250 ton wheel loaders.

Combination of teeth and wear plates for especially abrasive conditions.

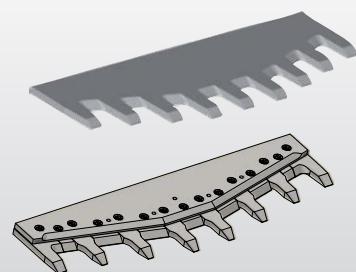


*Note: Combi lips can also be equipped with wearplates only, allowing you to match the bucket and GET to the working application*

### Serrated Lip

Up to 250 ton wheel loaders.

KVX system for Limestone and other softer materials like coal and bauxite

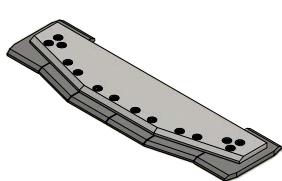




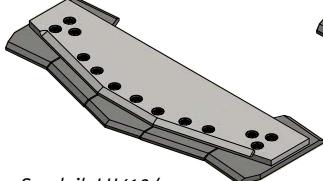
# SYSTEM FOR UNDERGROUND

**KVX has decades of experience with underground systems and has supported mining operations all over the world.**

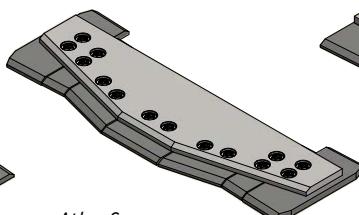
The well-proven bolt-on solution started more than 35 years ago in Scandinavian underground mines and has gained high acceptance and popularity. The system provide a welding-free GET solution where change of replaceable wear segments are done down in the mine.



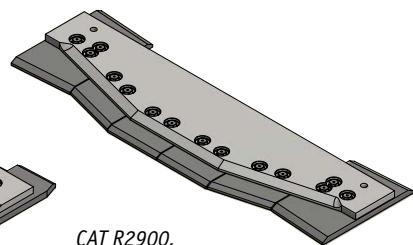
Atlas Copco ST7,  
Sandvik LH307, CAT R1300



Sandvik LH410/  
LH409E, Atlas Copco  
ST1030/EST1030, CAT R1600



Atlas Copco  
ST14, CAT R1700,  
Sandvik LH514/LH517



CAT R2900,  
Sandvik LH621,  
Atlas Copco ST18/ST1520/ST1530



KVX system at underground mine in Sweden.

*The KVX Hinge lip in operation with monolithic bolt-on teeth for eliminating issues with broken teeth/adapter in the crusher.*



# SYSTEM FOR EXCAVATORS

The KVX system is unique with its bolted-on reversible teeth and wear plates that fit all makes and models. The welding-free solution is used for eliminating issues with broken teeth/adapter in the crusher.

**EX3600**  
Finland

# KVX 1-bolt Tooth System

The 1-bolt system ranges from 26 - 400 tons

Since the launch of the 1-bolt system in 2004, KVX customers all over the world have experienced the advantages this simple but strong system has.

One bolt is all it takes. This system uses just one bolt to fit to the cutting edge, and fits all brands.

Simply place the teeth on the four dowels in the cutting edge and insert the bolt.

A quick and simple attachment that saves you both time and money.

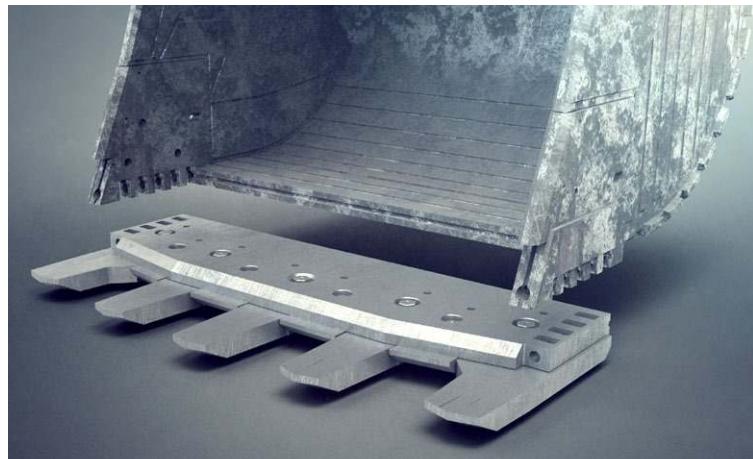


M52: 26-34 ton  
M60: 35-59 ton  
M68: 60-79 ton  
M80: 80-159 ton  
M90: 160-319 ton  
M100: 320-400 ton

## KVX Hinged Lip

KVX has for many years set it's goal to provide welding free GET systems to both the Construction and Mining markets and have since mid 1980'ies delivered it's well renowned bolt-on teeth & segments. The Hinge lip is a break-through when it comes to the lip itself.

The basis for the KVX Hinge Lip system is its ability for quick and easy change of the lip mechanically in the mine for main overhaul in the service shop. The Hinge Lip is connected to the bucket side wall by a hinge system which allow the side plate and the lip to move independent of each other (see video). Tooth changes between main overhaul is done in the mine with renewable tooth tips.



KVX Hinged Lip fits for Excavators and Face Shovels from 200 to 400 tons.

WATCH MOVIE:  
**KVX Hinged Lip in action**

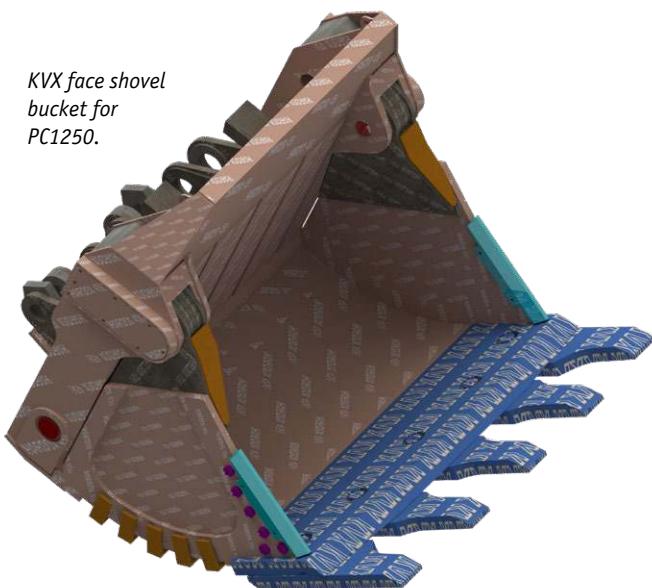


# SYSTEM FOR FACE SHOVELS



CAT 6040

Norway

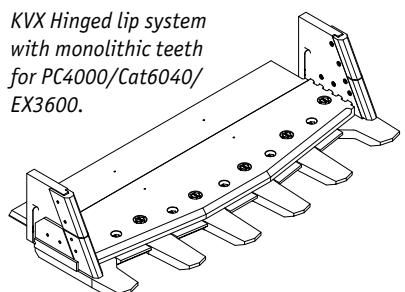


*KVX face shovel  
bucket for  
PC1250.*

**KVX has delivered G.E.T solutions for Face shovels for more than 30 years. This includes the highly reliable bolt-on system with single-end monolithic teeth for eliminating issues with broken teeth/adapter in the crusher. The Hinged Lip system is also available for face shovels from 200-400 tons.**



KVX Hinged lip system  
with monolithic teeth  
for PC4000/Cat6040/  
EX3600.



KVX offers lip and tooth  
systems to specific site  
needs. Complete buckets  
are available on request.



KVX Hinged Lip system  
with E2® tooth system for  
PC4000/Cat6040/EX3600.



**KVX**

WATCH MOVIE:  
KVX Corporate  
Movie



## KVX – It's Rock Science.

The KVX System has been developed in close co-operation with contractors, mines and quarries all over the world the last 30 years.

KVX is a market leading GET supplier in Scandinavia, with a steady growth in the international market. A wide product range, dependable factory support, flexible engineering resources, unique and unrivalled solutions, and wear parts of the highest quality are just a few reasons why KVX continue this growth and popularity.



### CUSTOMER TESTIMONIAL

## AUSTRALIAN CONTRACT MINING

### Longer life for machines, with KVX GET

Komatsu Australia offers a full range of KVX lips and Ground Engaging Tools (GET) specifically designed for use on under-ground loaders, with the potential to significantly lower overall GET related costs.

Better known in Scandinavian underground mines, local customers such as Australian Contract Mining (ACM) have been running KVX GET in demanding underground operations for a number of years. This ongoing patronage speaks for itself.

"Over the last few years we've operated KVX GET systems alongside the industry's better known alternatives, and we've found that the unique operational characteristics of KVX are ideally suited to development mining applications," said ACM's managing director Brian Rodan.



### KOMATSU KVX LLC

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