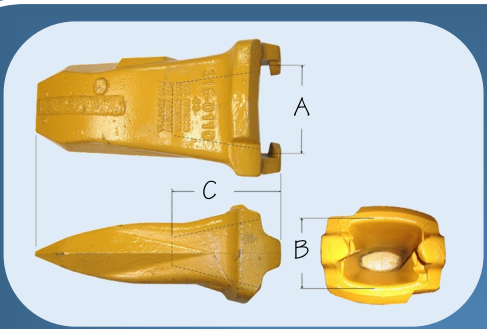
Steel Pin & Insert Top Pin Connection

Very High Possibility

Caterpillar® (Esco®) K-Series System



Caterpillar® K-Series® System			
Size	A	B	C
K-80	3.15”		
K-90	3.34”		
K-100	3.78”		
K-110	4.44”	3.50”	5.50”
K-130			
K-150			
K-170			

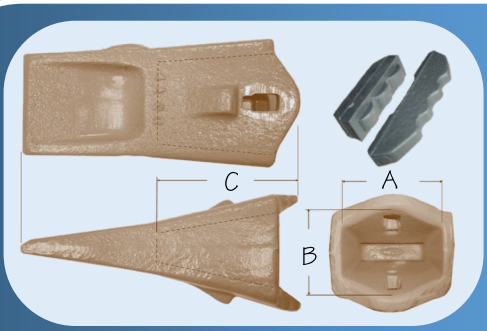
Caterpillar’s K-Series tooth system was patented by the Esco© Corporation and leased to the Caterpillar© Tractor Company. K-Series GET are available from *Caterpillar Dealers only*.

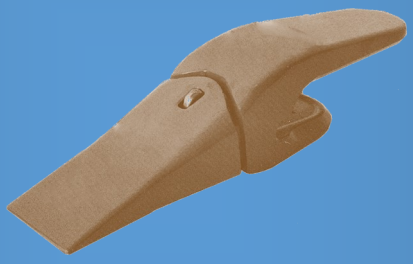
Patents were issued in 2001 (6,735,890), 2003 (7,100,315) and 2006 (7,739,814).

This product design is not offered by the H&L Tooth Company at this time.

Very High Possibility

Esco® Conical® Tooth System



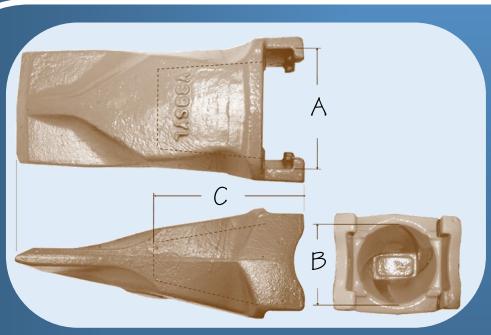


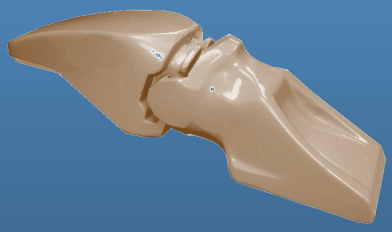
Esco® Conical® Tooth System			
Size	A	B	C
18	1.25”	1.50”	2.62”
25	2.56”	2.38”	3.25”
30	3.00”	2.38”	3.19”
35	3.50”	2.88”	3.81”
40	4.00”	3.10”	4.25”
45	4.50”	3.50”	4.75”
50	4.88”	3.81”	5.38”
55	5.38”	4.25”	5.59”
65	6.38”	5.25”	5.62”
70	6.81”	5.31”	7.31”

Patent 3,126,654 was issued in 1964, Esco no longer supports the Conical tooth design for new bucket installations. A variety of these Conical style teeth and sizes are still made overseas by many cast manufactures. Although H&L has ceased producing the conical design as a forging, there are many forged teeth remaining in H&L’s Tulsa, Oklahoma factory.

Very High Possibility

Esco® Super-V® Tooth System



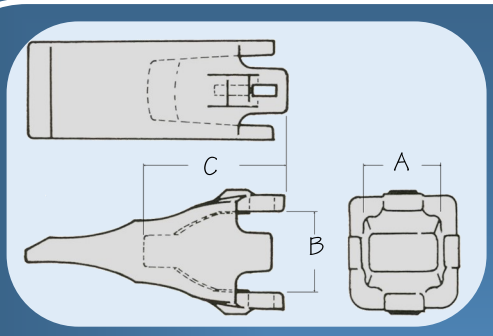


Esco® Super-V® Tooth System			
Size	A	B	C
V13	1.70”	1.20”	2.25”
V17	2.00”	1.50”	2.69”
V19	2.56”	2.03”	3.00”
V23	2.83”	2.50”	3.50”
V29	3.02”	2.70”	4.19”
V33	3.42”	3.06”	4.50”
V39	3.86”	3.50”	4.70”
V43	4.34”	3.88”	5.50”

Esco’s original patents were issued in early 1988 (4,811,505) and 1989 (4,965,945). The twist on the tooth system has gone through many changes over the years. To name a few, Helilock and Vertilok. There is no interchangeability between Esco tooth systems.

Steel Pin & Insert Top Pin Connection

Very High Possibility



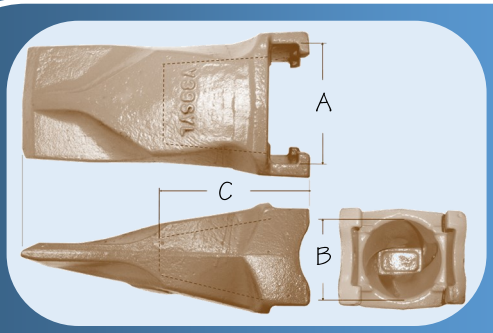
Esco® Super Conical Tooth System

Esco® Super Conical Series			
Size	A	B	C
36	2.31”	2.35”	3.81”
46	2.75”	3.19”	5.50”
56	3.38”	4.19”	6.62”

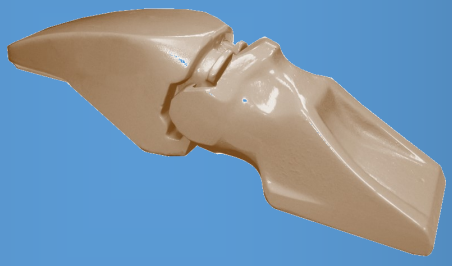
Esco’s original Patents were issued in1964; 3,126,654. A variety of these Super Conical style teeth and sizes are still being manufactured by many tooth companies.

This product design is not offered by the H&L Tooth Company at this time.

Very High Possibility



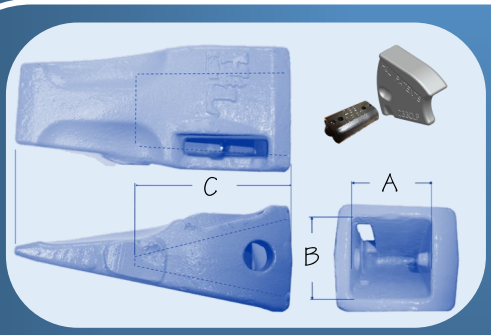
Esco® Vertilok® Tooth System



Esco® Twist-on Vertilok®			
Size	A	B	C
21	2.75”	2.38”	3.50”
27	3.12”	2.81”	3.88”
37	3.70”	3.38”	4.75”
47	4.44”	3.88”	5.40”

Esco’s original patents were issued in early 1988 (4,811,505) and 1989 (4,965,945). The twist on the tooth system has gone through many changes over the years. To name a few, Helilock and Vertilok. Ther is no interchangeability between Esco tooth systems.

Good Possibility



H&L® Kliploc & Flexklip Tooth System

H&L® Kliploc® System			
Size	A	B	C
233	1.81”	1.93”	2.75”

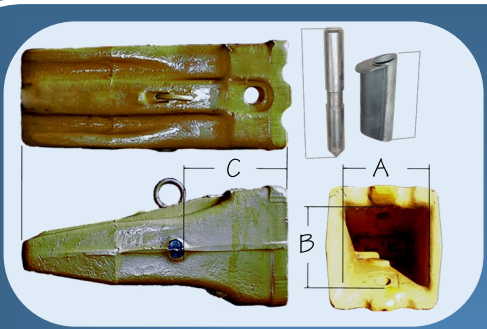
Patented by H&L Tooth Company

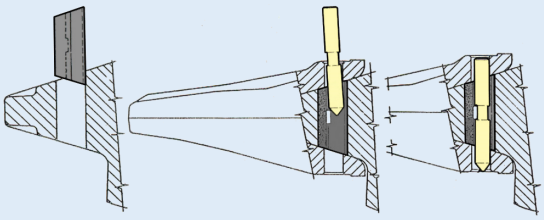
The 233 series Kliploc system was designed to replace the sixty year old 23/230 series tooth system. The original Kliploc patent was granted in 2006: 8,347,530. The hammerless system changes the original 230 series horizontal/side pin connection to a vertical/top lock installation… without the need to change the existing adapters on the bucket.

Steel Pin & Insert Top Pin Connection

Good Possibility

H&L® Mining Flexhol© Tooth System





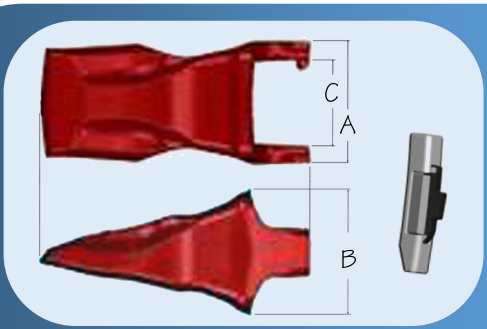
Installation of the Insert into the mining adapter, placement of the tooth, then hammer the steel pin through the tooth and nose, locking the pin to the Insert.

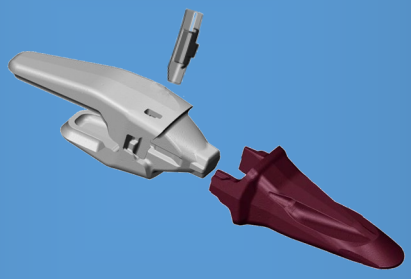
H&L's "VP©", Vertical Pin was first introduced into the mining field around 1980, with the patent following in early 1983; 4,516,340. The Flexpin© was replaced with a Flexhol© insert and steel pin connection. The system utilizes the forged 500-series mining system for Electric Shovel Whisler designs. All H&L forgings are **Made in the USA!**

H&L® Mining Flexhol Series			
Size	A	B	C
541	5.35"	6.15"	7.50"
543	5.90"	6.30"	7.12"
546	6.90"	7.10"	7.25"

Fair Possibility

MTG® Metalogenia "Kingmet" System





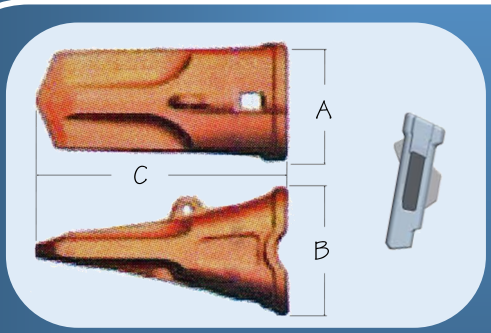
Kingmet was patented by Metalogenia S. A. between 1999 and 2002; 6,745,503, 6,321,471 and 6,836,983. It was later patented in the United States. Metalogenia's Kingmet top pin tooth line has been primarily used in Europe with some installation in Eastern Canada with pockets in the Eastern U.S.

MTG® Kingmet® Tooth System			
Size	A	B	C
MG-5	1.97"	1.85"	1.42"
MG-8	2.36"	2.24"	1.69"
MG10	2.73"	2.60"	1.97"
MG-15	3.27"	3.11"	2.36"
MG-20	4.02"	4.02"	2.80"
MG-30	4.53"	4.57"	3.19"
MG-40	5.15"	5.24"	3.62"
MG-55	5.79"	5.83"	4.06"
MG-65	6.43"	6.50"	4.53"
MG-80	7.00"	7.05"	4.92"

This product design is not offered by the H&L Tooth Company at this time.

Low Possibility

Combi® ProClaw® Tooth System



Combi® ProClaw® Tooth System			
Size	A	B	C
W10	5.04"	6.02"	*12.75"
W20	6.65"	7.44"	*14.80"
W25	7.09"	7.91"	*16.26"
W30	8.46"	9.29"	**18.94"
W40	9.37"	10.32"	**20.51"
W50	10.33"	11.40"	**22.60"
	*GPE, **AE Tooth Styles		

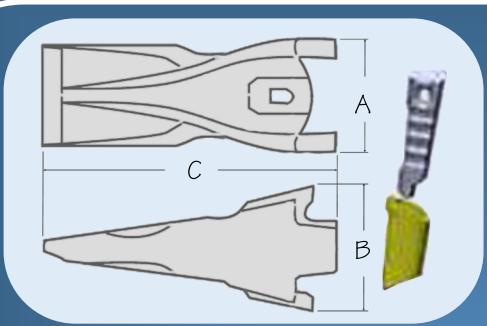
Original European patent was issued around 2003. United States patents was issued in 2006; 7,703,224. The ProClaw tooth system is mostly found in Europe with very limited exposure in Canada and parts of the Eastern U.S. The ProClaw is used on large mining machines and as far as we know it is not standard on any OEM offering.

This product design is not offered by the H&L Tooth Company at this time.

Steel Pin & Insert Top Pin Connection

Low Possibility

Feurst® FastKey Tooth System



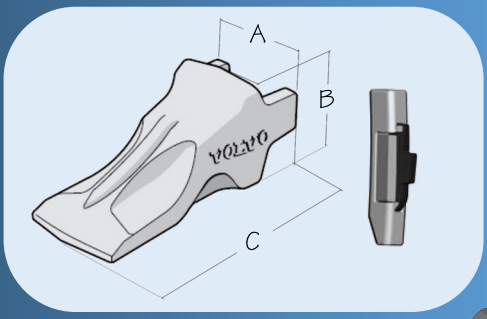
Feurst® FastKey® Tooth System			
Size	A	B	C
FK-1	1.90”	2.44”	5.67”
FK-2	2.38”	2.91”	6.73”
FK-3	2.50”	3.11”	7.52”
FK-4	3.00”	3.62”	8.66”
FK-5	3.50”	4.21”	9.96”
FK-7	3.88”	4.84”	11.26”
FK-9	4.75”	5.60”	13.54”
FK-11	5.00”	6.81”	15.35”
	*TLR Tooth Style		

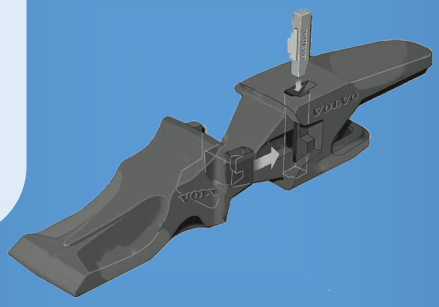
Made by Feurst Company in France. The FastKey product can be found in Europe and pockets of Australia.

This product design is not offered by the H&L Tooth Company at this time.

Low Possibility

Volvo® Tooth System





Volvo® Tooth System			
Size	A	B	C
5GPC	”	”	”
8GPC	”	”	”
10GPL	”	”	”
15GPL	”	”	”
20GPL	”	”	”
30GPL	”	”	”
40AMRL	”	”	”
55GPL	”	”	”

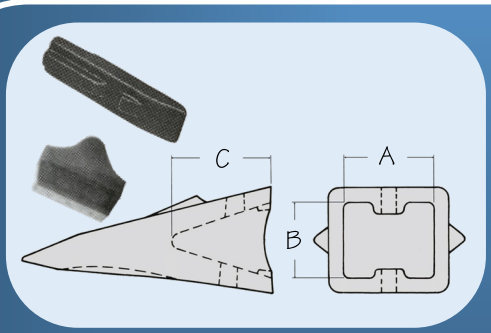
Patented by Metalogenia S. A.

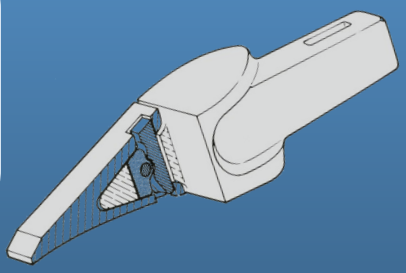
Volvo’s version of Kingmet was patented by Metalogenia S. A. between 1999 and 2002; 6,745,503, 6,321,471, 6,865,828 and 6,836,983. This top pin tooth line has been primarily used in Europe and can be found on Volvo machines in the USA.

This product design is not offered by the H&L Tooth Company at this time.

Low Possibility

Amsco® Tooth System





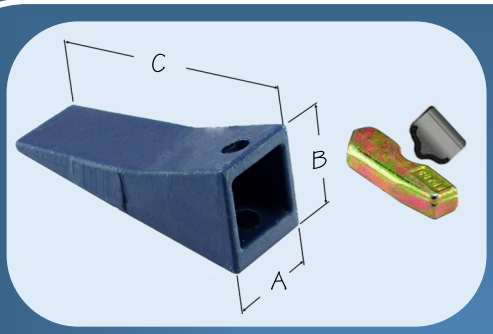
Amsco® Tooth System			
Size	A	B	C
ST-9	2.00”	2.00”	3.12”
ST-10	2.50”	2.25”	2.50”
ST-11	3.00”	2.56”	3.75”
ST-12	3.50”	2.75”	4.25”
ST-13	4.38”	3.38”	4.75”
ST-14	3.75”	3.25”	5.00”
ST-15	4.50”	3.50”	5.50”
ST-16	5.25”	4.40”	6.50”

Although the original Amsco style products can still be found in the field, the design has basically been obsoleted and replaced with other current GET designs.

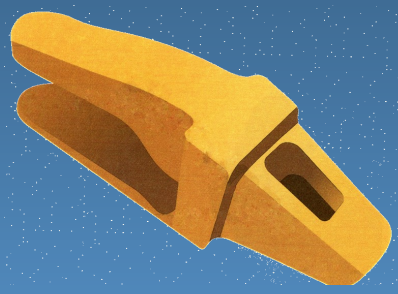
This product design is not offered by the H&L Tooth Company at this time.

Steel Pin & Insert Top Pin Connection

Low Possibility



Keech® Tooth System



Keech® Top Pin			
Size	A	B	C
03T3	2.35”	2.30”	5.50”
04T3			
07T3	3.00”	3.50”	7.70”
1T3	3.94”	3.70”	8.25”
20K3	4.94”	3.81”	9.12”
	Dimension with “S” Tooth		

Keech Australia has several range of direct replacement wear parts. Keech Australia ground engaging tools top pin tooth line has been primarily used in Australia, very few, if any has reached the USA.

This product design is not offered by the H&L Tooth Company at this time.