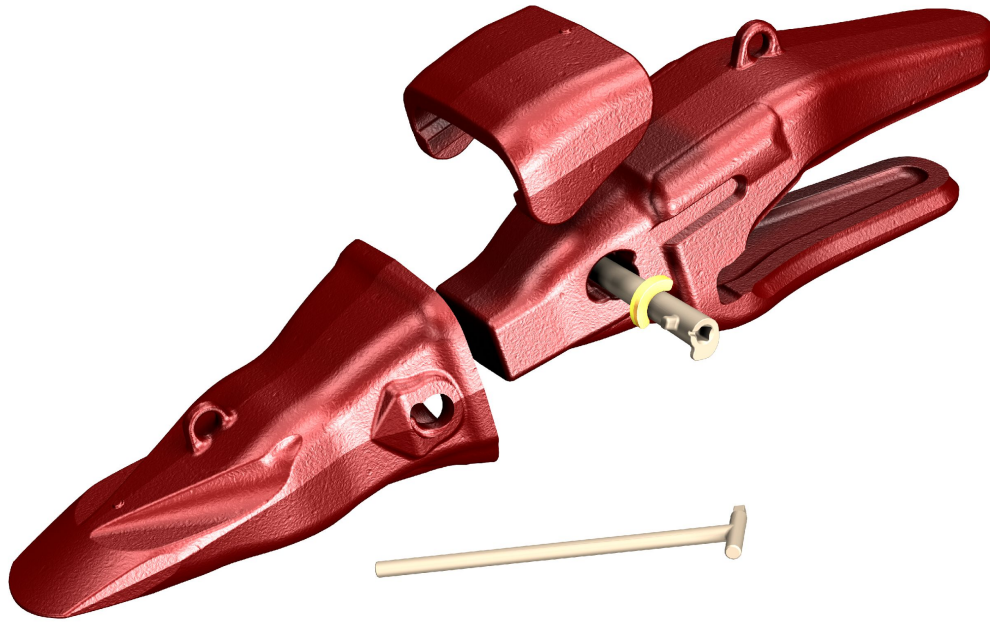


# MTG

No limits innovation

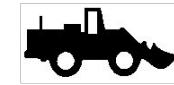
STARME  
T

# Safe and productive!



# Innovative hammerless Teeth-Adapter System for Heavy Construction, Quarrying and Mining

## Size selection

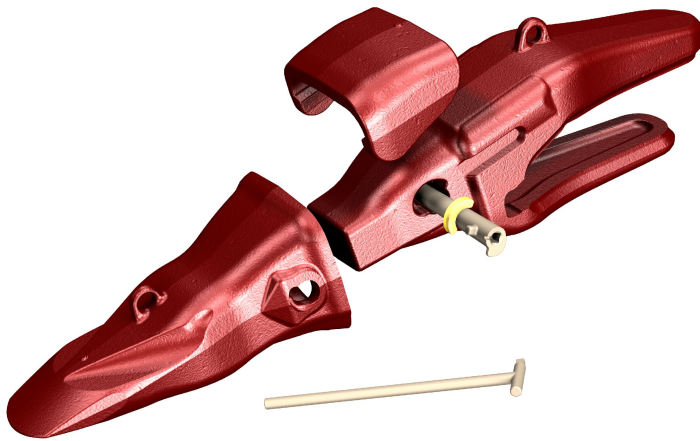


Size		(Min-Max)		(Min-Max)		(Min-Max)	
		STD	HD	STD	HD	STD	HD
120	(*) BOF (kN)	383 - 477	312 - 383	452 - 563	366 - 452	703 - 904	579 - 703
	Machine Weigh	85 - 120	65 - 90	80 - 110	60 - 85	100 - 148	84 - 100
180	(*) BOF (kN)	477 - 613	383 - 499	563 - 704	452 - 591	904 - 1139	703 - 886
	Machine Weigh	120 - 185	90 - 126	110 - 160	85 - 122	148 - 245	100 - 139
240	(*) BOF (kN)	613 - 775	499 - 613	704 - 863	591 - 704	1139 - 1357	886 - 1055
	Machine Weigh	185 - 275	126 - 191	160 - 219	122 - 159	245 - 348	139 - 210
500	(*) BOF (kN)	775 - 1035	613 - 785	863 - 1187	704 - 901	-	-
	Machine Weigh	275 - 400	191 - 272	219 - 335	159 - 233	-	-

Machine weight only for reference, size will be determined by the BOF

(\*) BOF: Maximum Break Out Force (kN)

# BENEFITS



- ✓ Greater safety
- ✓ Longer service life
- ✓ Increased savings and productivity

# Greater safety

## MTG Systems Starmet

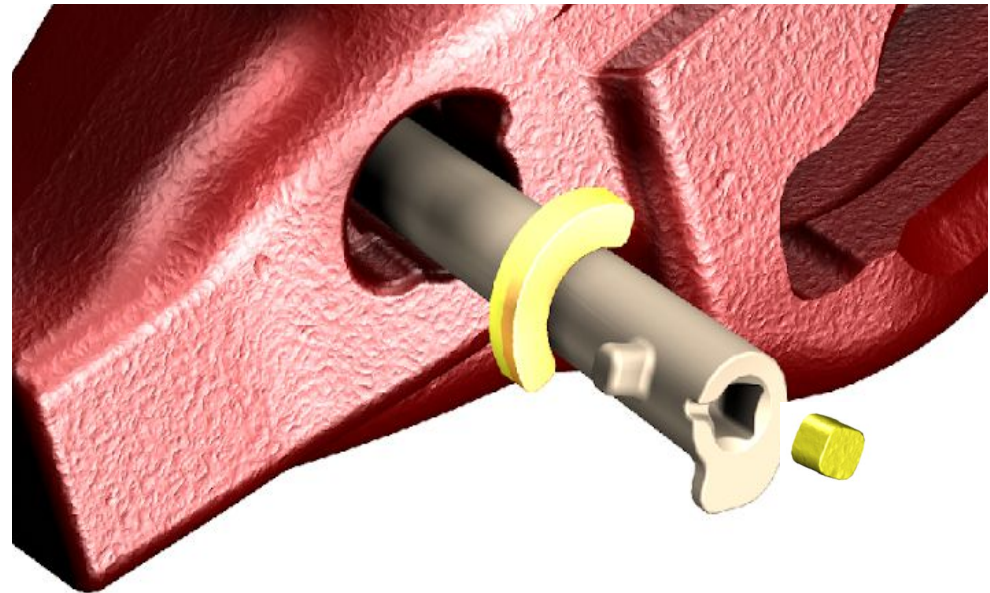
Uses **MTG twist**,  
the innovative  
hammerless solution  
for mounting  
tooth-adaptor

Conical Pin Body  
Easier extraction



Elastomet  
retainer

Locking  
arm



Extraction  
arm.

Square cavity for a  
standard square key

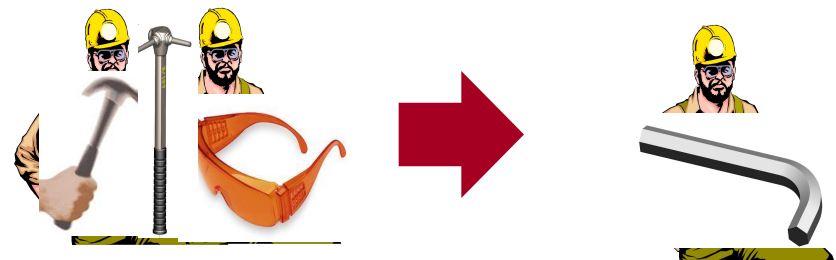
Plug

# Greater safety

This innovative solution offers **SAFETY**:

For the tooth change:

- **Safety:** No accidents
- **Comfort:** Lower effort than using a hammer
- **Easier to use**

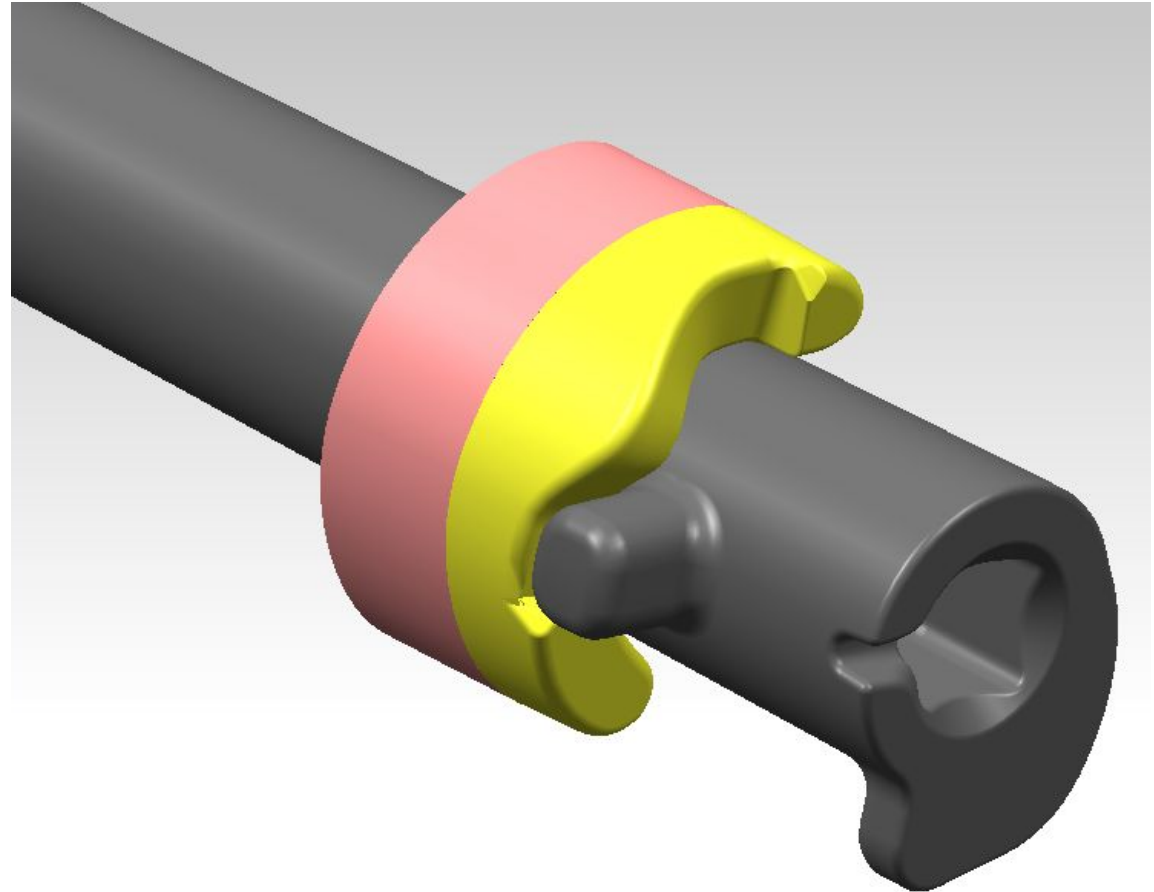


# Greater safety

**This innovative solution offers REALIABILITY:**

**When operating:**

- Safer holding mechanism:  
**Excellent retention**

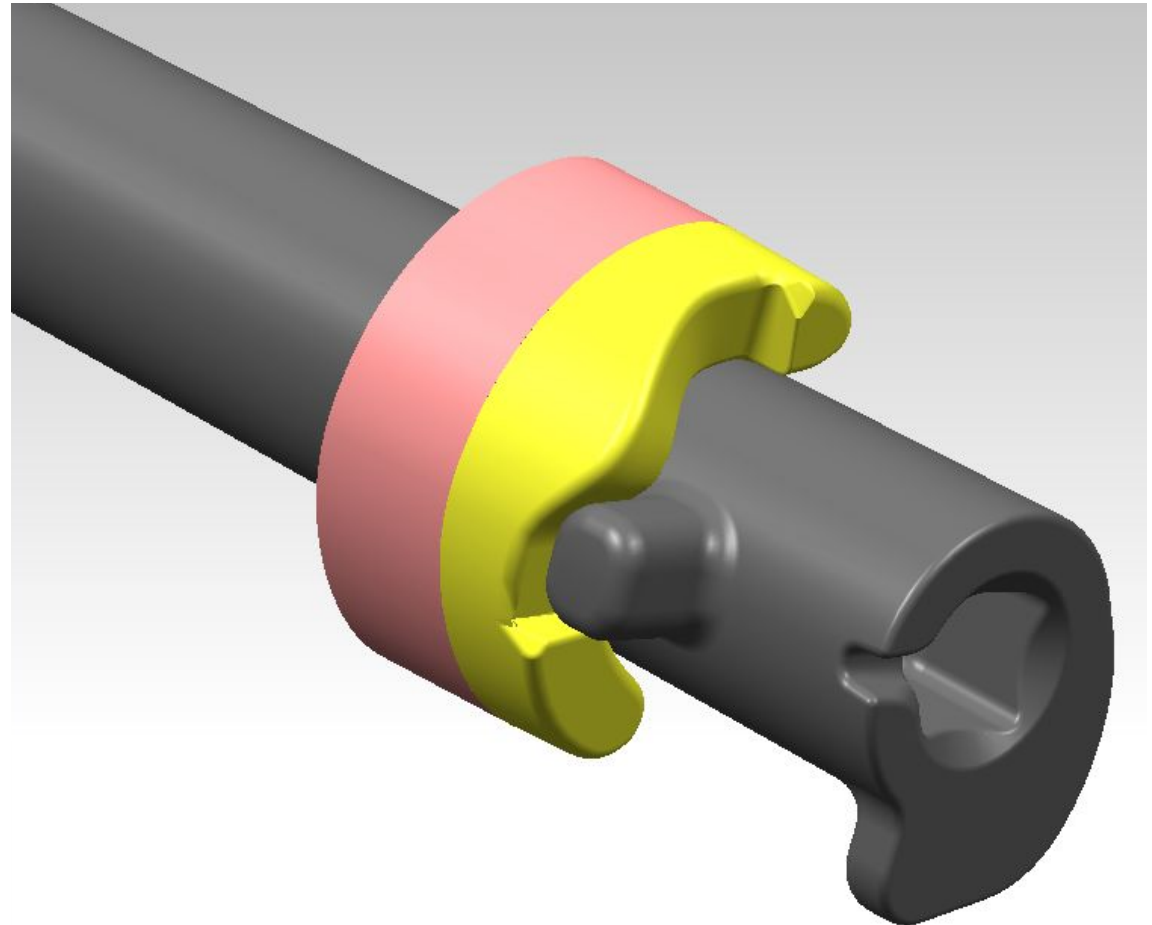


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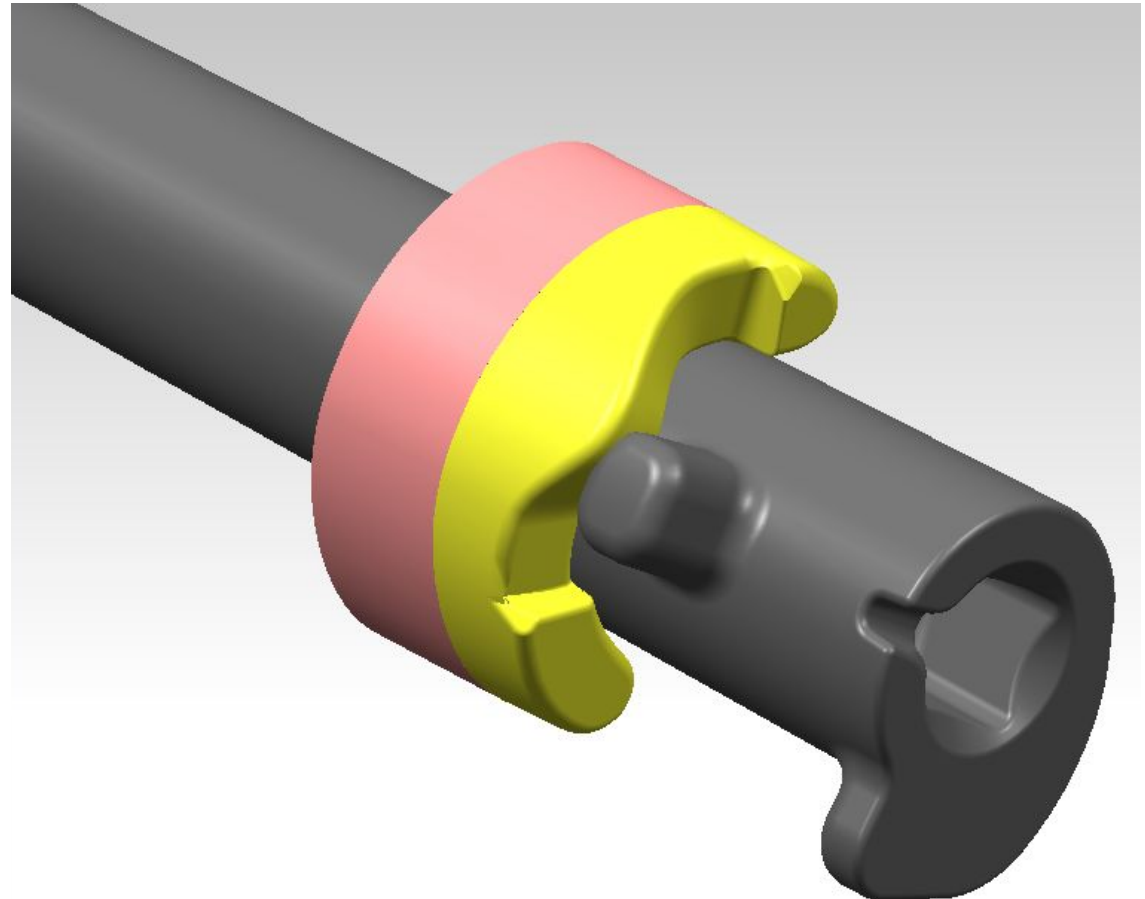


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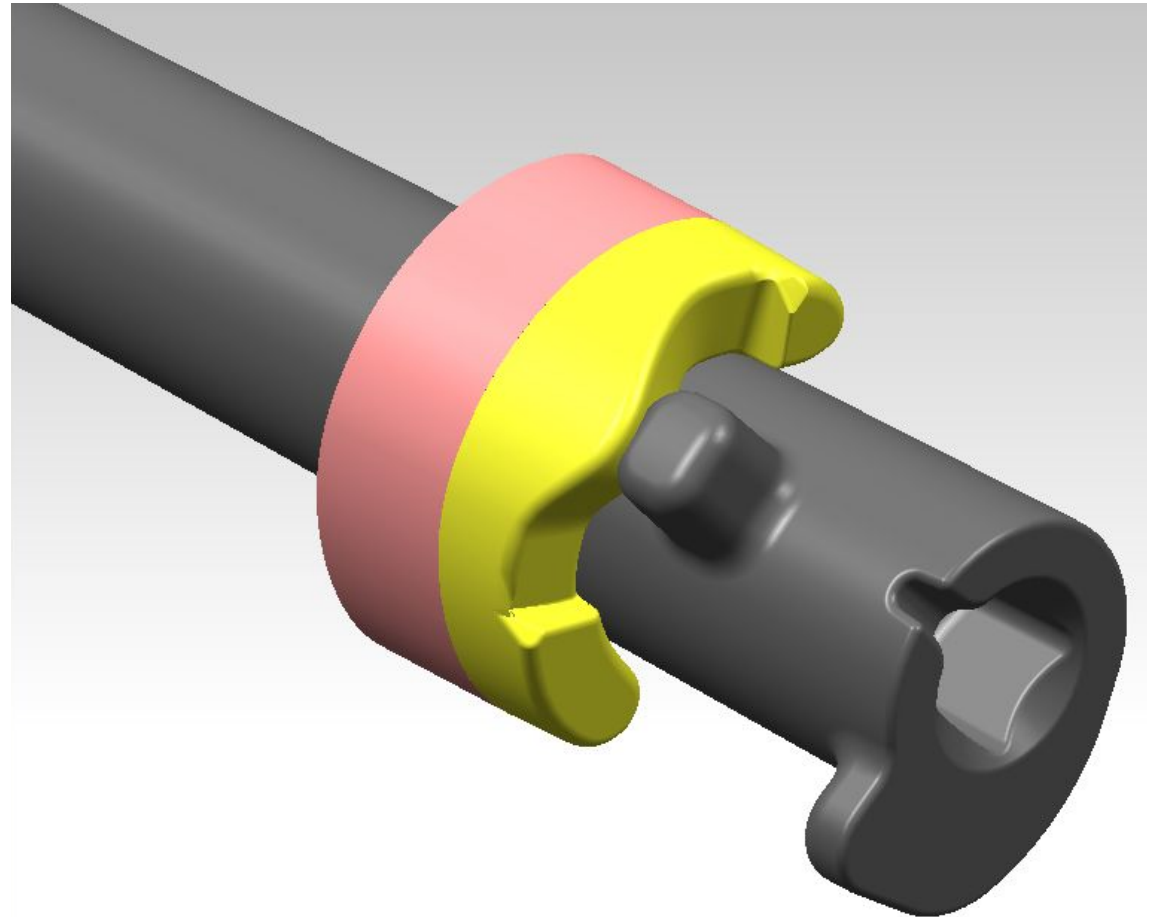


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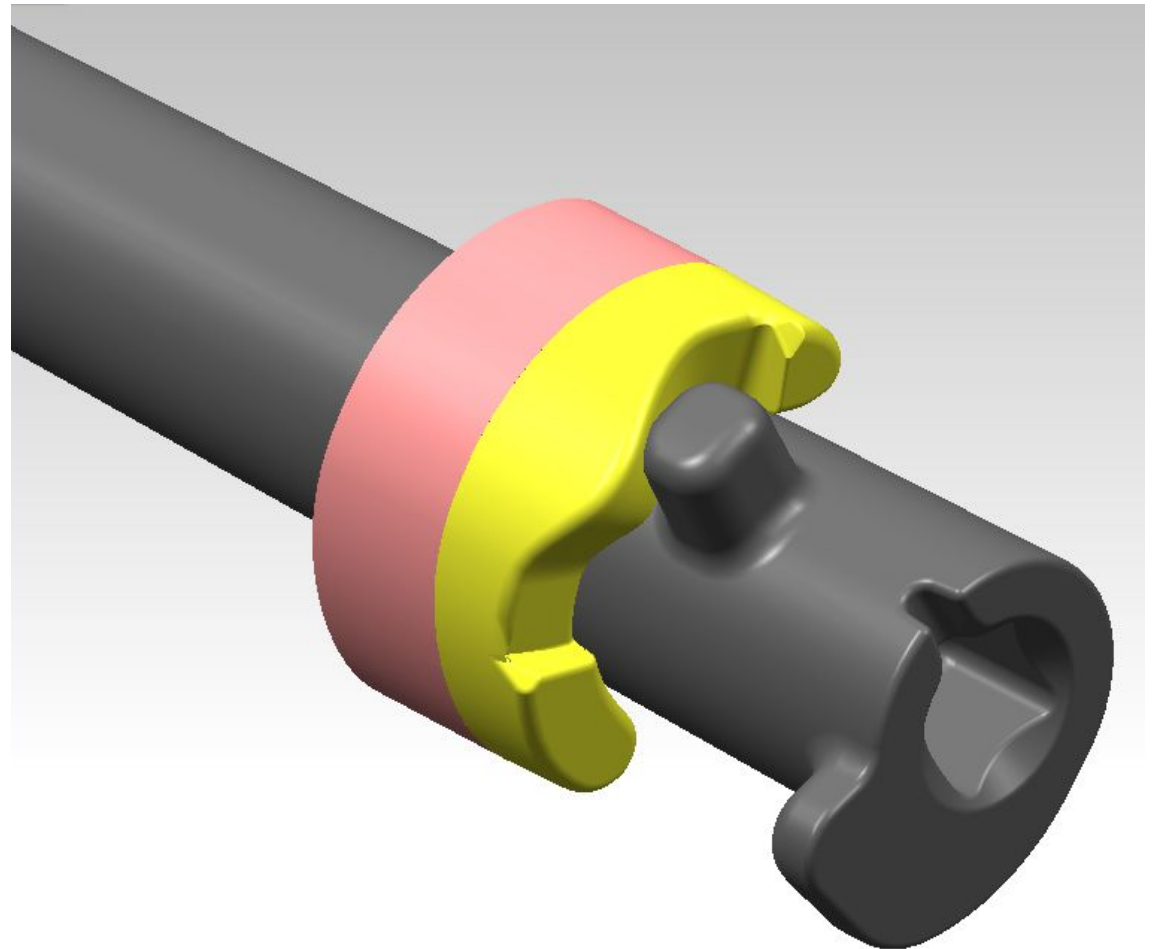


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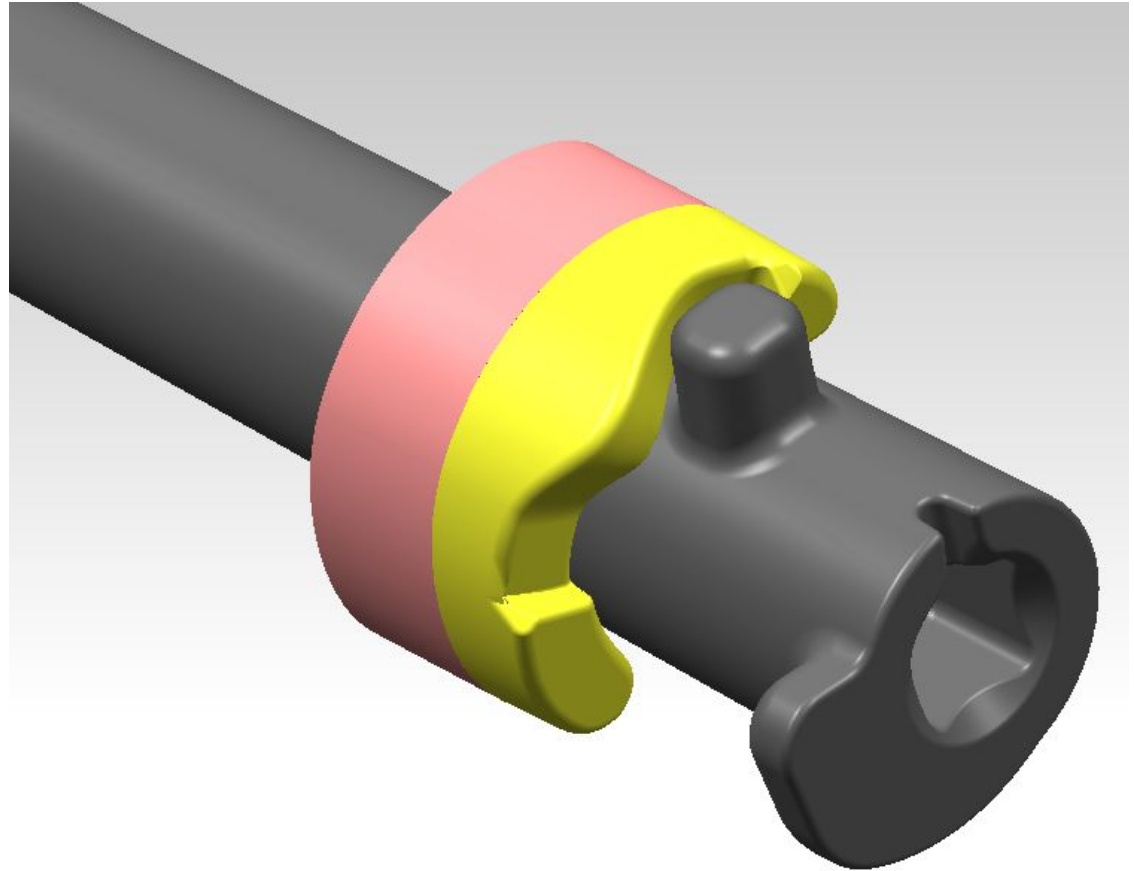


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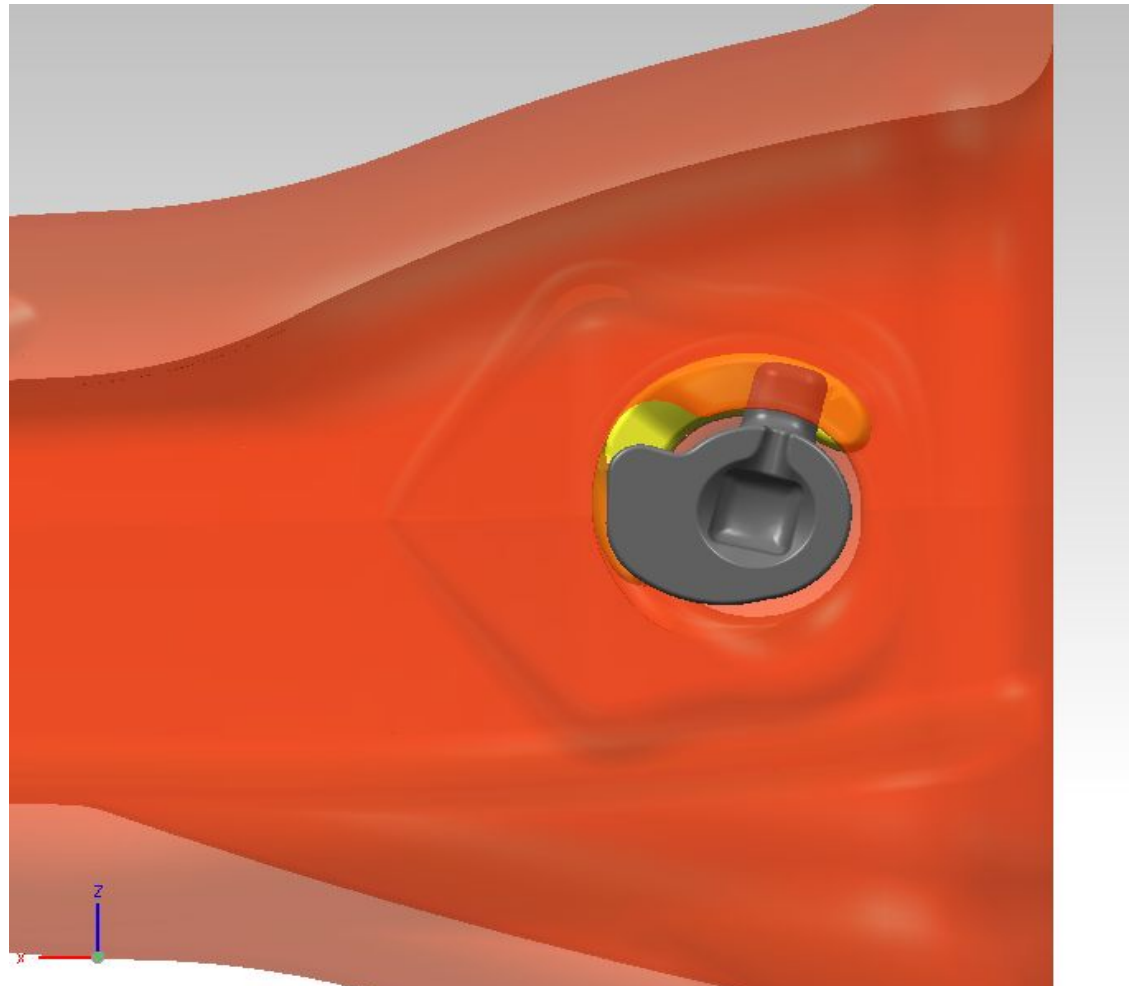


# Greater safety

**This innovative solution offers REALIABILITY:**

**When operating:**

- Safer holding mechanism:  
**Excellent retention**



# Longer Service Life



**Tooth**  
Optimised design,  
with more wear material.



**Fitting system**  
Designed for optimum distribution  
of forces for maximum resistance  
and strength.



**Adapter**  
System designed to protect the adapter  
and the welding from lower and  
lateral wear




**Mechanical Wear Cap**  
Designed for highly abrasive  
applications extending the service  
life of the adapter..

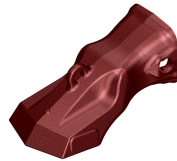
**Locking  
system**  
Re-usable pin.

# Longer Service Life

Size 120



	 kgs / lbs	Kgs. WM	% WM
<b>MA120E</b>	27,9 / 61.5	15,9	57,0%
<b>V61SD</b>	26,3 / 58.0	14,6	55,5%
	6,1%	8,9%	



<b>MA120H</b>	46,5 / 102.5	36,1	77,6%
<b>V61ARL</b>	38,6 / 85.1	26,8	69,4%
	20,5%	34,7%	



<b>MA120I</b>	24,0 / 52.9	11,9	49,7%
<b>V61RY</b>	22,2 / 48.9	10,2	45,9%
	7,9%	16,7%	



<b>MA120P</b>	22,4 / 49.4	10,5	46,8%
-	-	-	-
	-	-	




<b>MA120V</b>	23,4 / 51.8	11,6	49,5%
<b>V61VX</b>	22,0 / 48.5	10,2	46,4%
	6,6%	13,7%	

# Longer Service Life

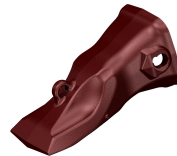
Size 180



	 kgs / lbs	Kgs. WM	% WM
<b>MA180E</b>	41,2 / 90.8	25,0	60,7%
<b>V69SD</b>	39,0 / 86.0	22,7	58,2%
	5,6%	10,1%	



<b>MA180H</b>	69,0 / 152.1	54,4	78,8%
<b>V69ARL</b>	53,0 / 116.8	36,7	69,2%
	30,2%	48,2%	



<b>MA180I</b>	35,9 / 79.1	19,6	54,6%
<b>V69RYL</b>	35,0 / 77.2	18,7	53,4%
	2,6%	4,8%	



<b>MA180P</b>	32,8 / 72.3	16,2	49,4%
-	-	-	-
	-	-	




<b>MA180V</b>	32,5 / 71.6	16,8	51,6%
<b>V69VX</b>	31,0 / 68.3	14,7	47,4%
	4,8%	14,1%	



# Longer Service Life

Size 240



	 kgs / lbs	Kgs. WM	% WM
<b>MA240E</b>	49,4 / 108.9	28,3	57,3%
<b>V71SD</b>	46,0 / 101.4	25,0	54,3%
	7,4%	13,2%	



<b>MA240H</b>	93,0 / 205.0	73,2	78,7%
<b>V71ARL</b>	62,0 / 136.7	40,6	65,5%
	50,0%	80,3%	



<b>MA240P</b>	40,7 / 89.7	19,2	47,2%
-	-	-	-
	-	-	




<b>MA240V</b>	45,0 / 99.2	23,0	51,1%
<b>V71VX</b>	41,0 / 90.4	20,0	48,8%
	9,8%	15,0%	

# Longer Service Life

Size 500



	 kgs / lbs	Kgs. WM	% WM
<b>MA500E</b>	76,5 / 168.7	40,3	56,0%
<b>V81SD</b>	73,0 / 160.9	39,0	54,3%
	4,8%	3,3%	



<b>MA500P</b>	69,0 / 152.1	31,1	56,0%
-	-	-	-
	-	-	



<b>MA500V</b>	71,0 / 156.5	35,2	56,0%
<b>V81VX</b>	66,0 / 145.5	30,3	54,3%
	7,6%	16,2%	

# Longer Service Life

## WEAR PROTECTION

### Longer Adapter Life

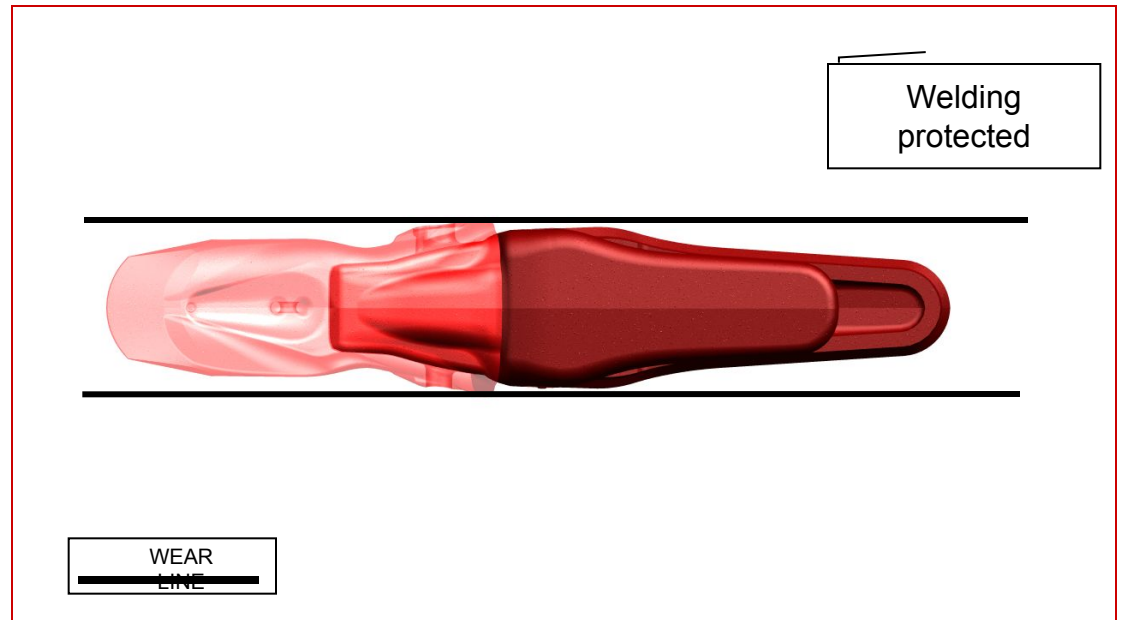
- The tooth box protects the adapter even when not using wear cap
- Welding area protected by the tooth and the fitting system



# Longer Service Life

## WEAR PROTECTION

Adapter geometry helps protect the welding area from wear.



# Longer Service Life

## MECHANICAL WEAR CAP

Designed for highly abrasive applications extending the service life of the adapter..

- The wear cap is mounted from the front of the adapter following the guides
- Wear cap held by the tooth
- Quick wear cap change
- Easy handling



# Longer Service Life

## FITTING SYSTEM

Designed for optimum distribution of forces for maximum resistance and strength.

### Stabilization surfaces

- Reduce plastic deformation



# Longer Service Life

## FITTING SYSTEM

Designed for optimum distribution of forces for maximum resistance and strength.

- **Smooth surfaces** in critical areas help to distribute stress while working.
- No stress concentration



# Longer Service Life

## LOCKING SYSTEM

Re-usable pin.

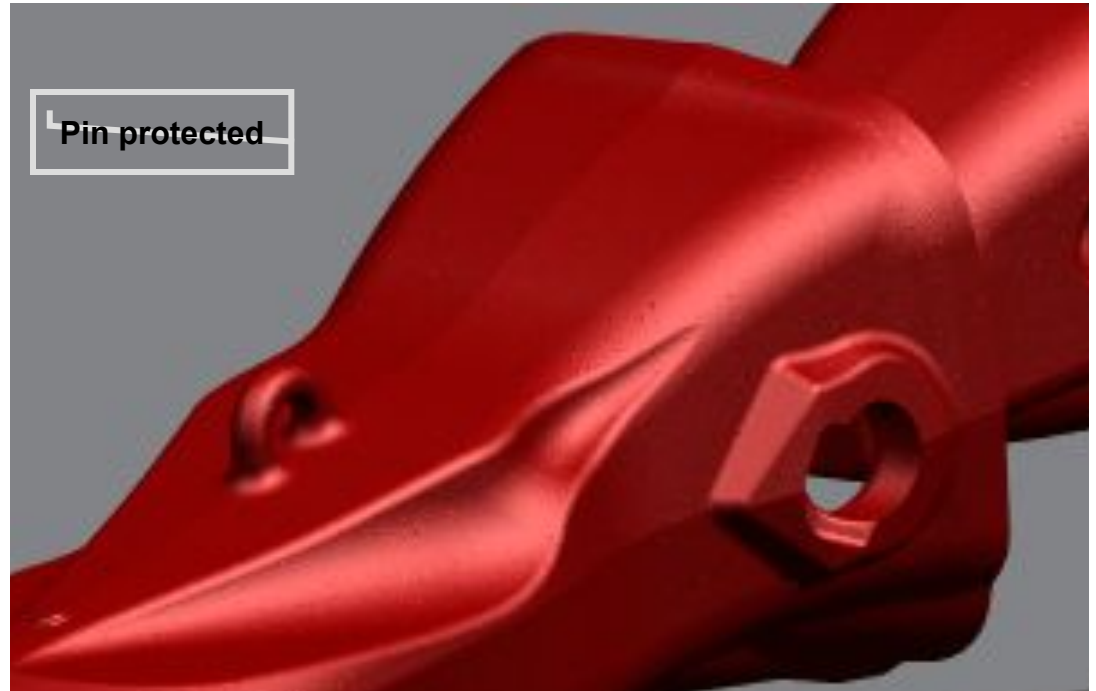
- Reactions to applied loads help maintain the system tight
- The pin suffers no stress



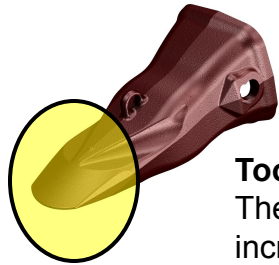


# Longer Service Life

**LOCKING  
SYSTEM**  
Re-usable pin.



# Increased savings and productivity



## **Tooth**

The penetrating design of the tooth increases your machine's productivity.



## **Locking system**

The innovative MTGtwist solution facilitates assembly and disassembly reducing your machine's downtime.



## **Adapter**

Optimised design reducing the amount and length of downtime saving maintenance time due to its extended service life.



## **MTG Steels**

Steels with longer life and fewer breakages.

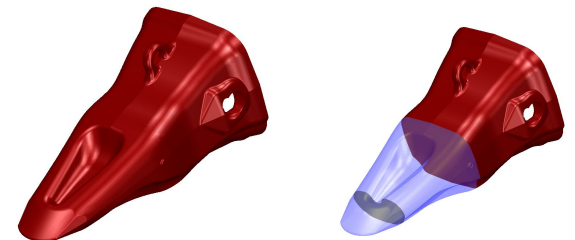
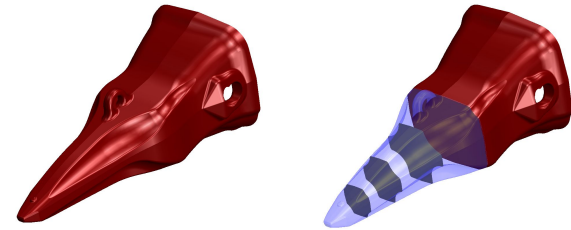
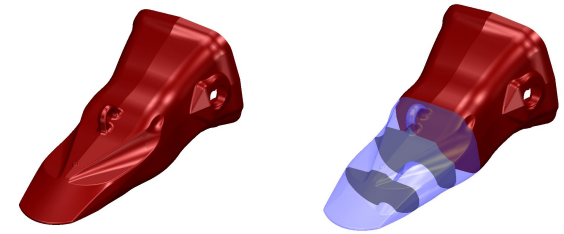
# Increased savings and productivity

## TEETH STAY ALWAYS SHARP

Better bucket penetration

Excellent penetration throughout its service life.

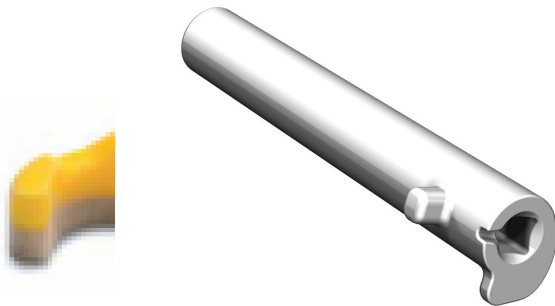
- Less consumption for the machine



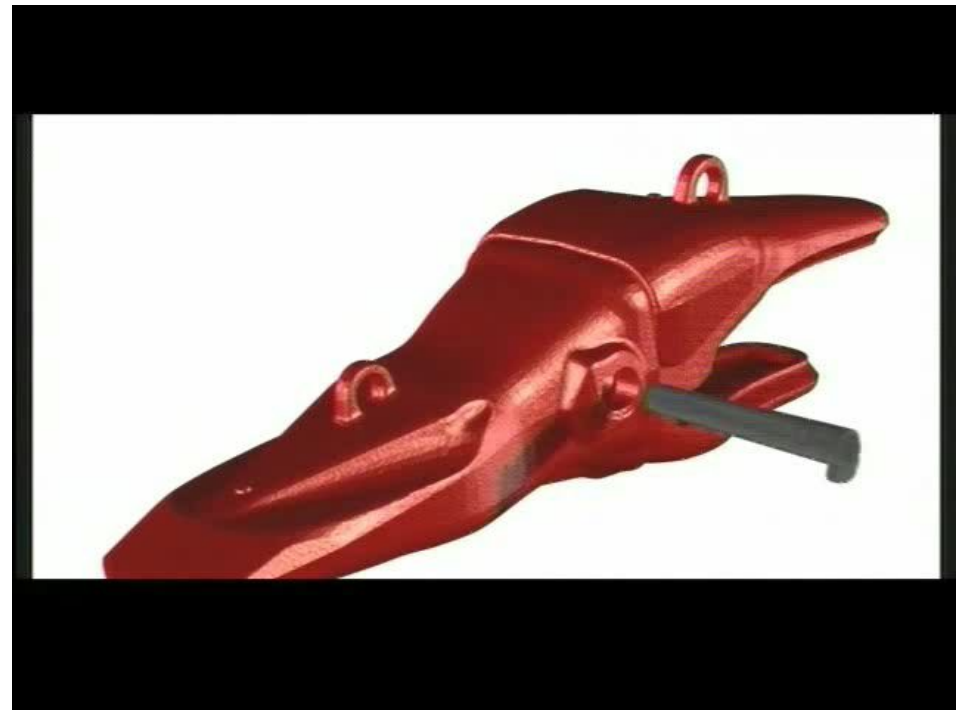
# Increased savings and productivity

## TO FACILITATE EXTRACTION:

- Conical Pin
- Breaking the compacted fines:  
Easier extraction



## QUICK ASSEMBLY AND DISASSEMBLY



# Increased savings and productivity

**QUICK ASSEMBLY  
AND  
DISASSEMBLY**



# Proven Results



S O R I G U E

**Liebherr 984**

**Teeth 180V  
Starmet**





**ALBERTO JORDA**

Responsable mantenimiento de maquinaria  
Mechanic responsible for machine maintenance

***Compared with the previous pins you used:  
What is your opinion regarding Safety?***

- The locking system in which you don't have to use a hammer... it's much better.





***Is it faster to  
change teeth  
now?***

- Yes, much faster.








¿Cuánto tiempo se tarda  
en hacer un cambio de dientes ?

***How long does it  
take to perform a  
tooth change?***

- Half an hour....  
approximately






¿Y antes cuánto se tardaba ?

***And before, how long did it take?***

- An hour and a half.  
We've reduced one hour.





¿Qué destacarías del sistema?

***What feature of the system stands out?***

- It's safer, it's impossible to hurt yourself, it's better....one thousand times better.





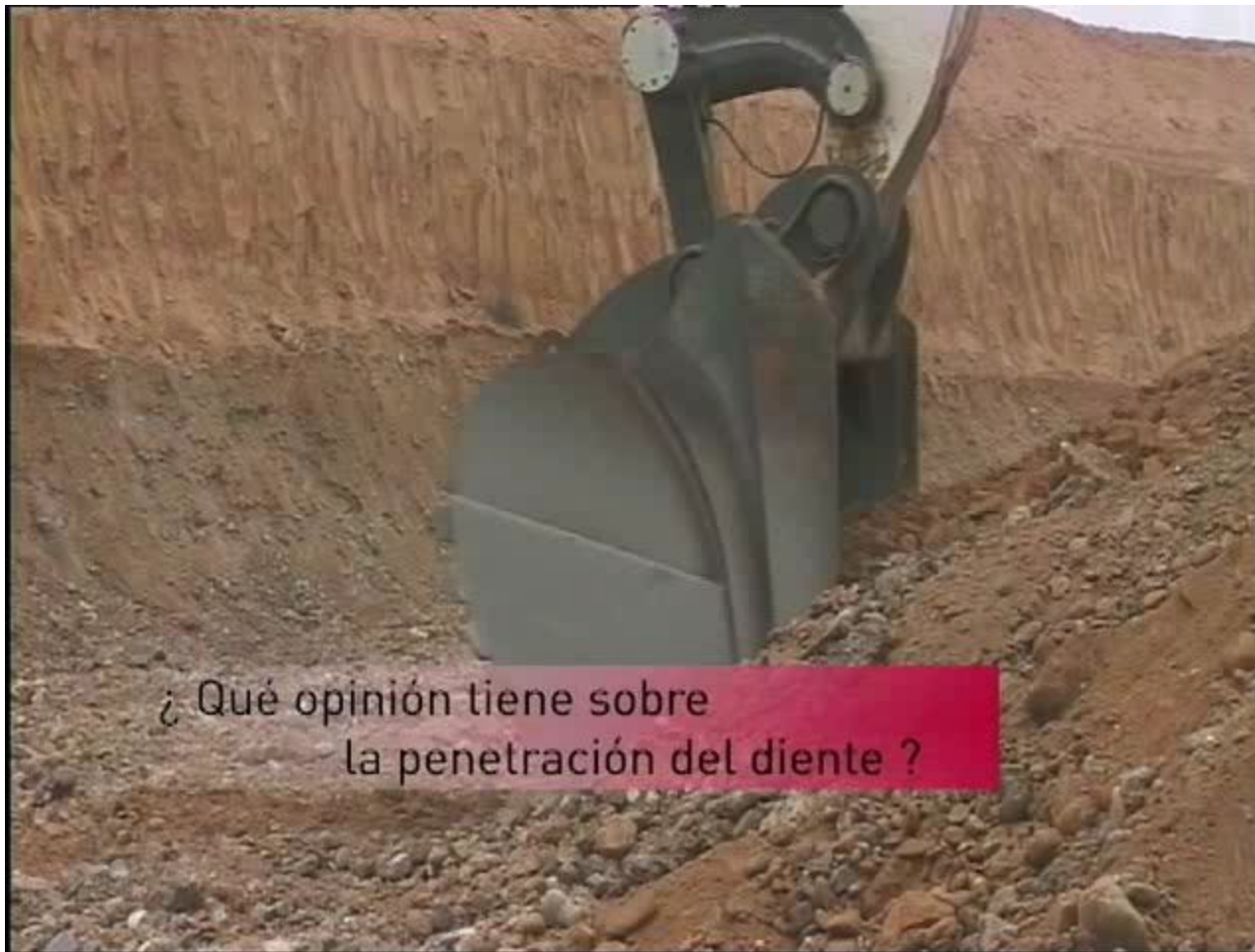
Lluís Peiró

Maquinista de LIEBHERR 984  
LIEBHERR 984 Machine Driver

***What is your  
opinion about the  
product?***

- Very tough...high  
quality. The  
product is very  
good.





¿ Qué opinión tiene sobre  
la penetración del diente ?

***What is your  
opinion about  
the teeth  
penetration?***

- When the teeth  
is new the  
penetration is  
great...and it  
continues  
throughout the  
life of the part.



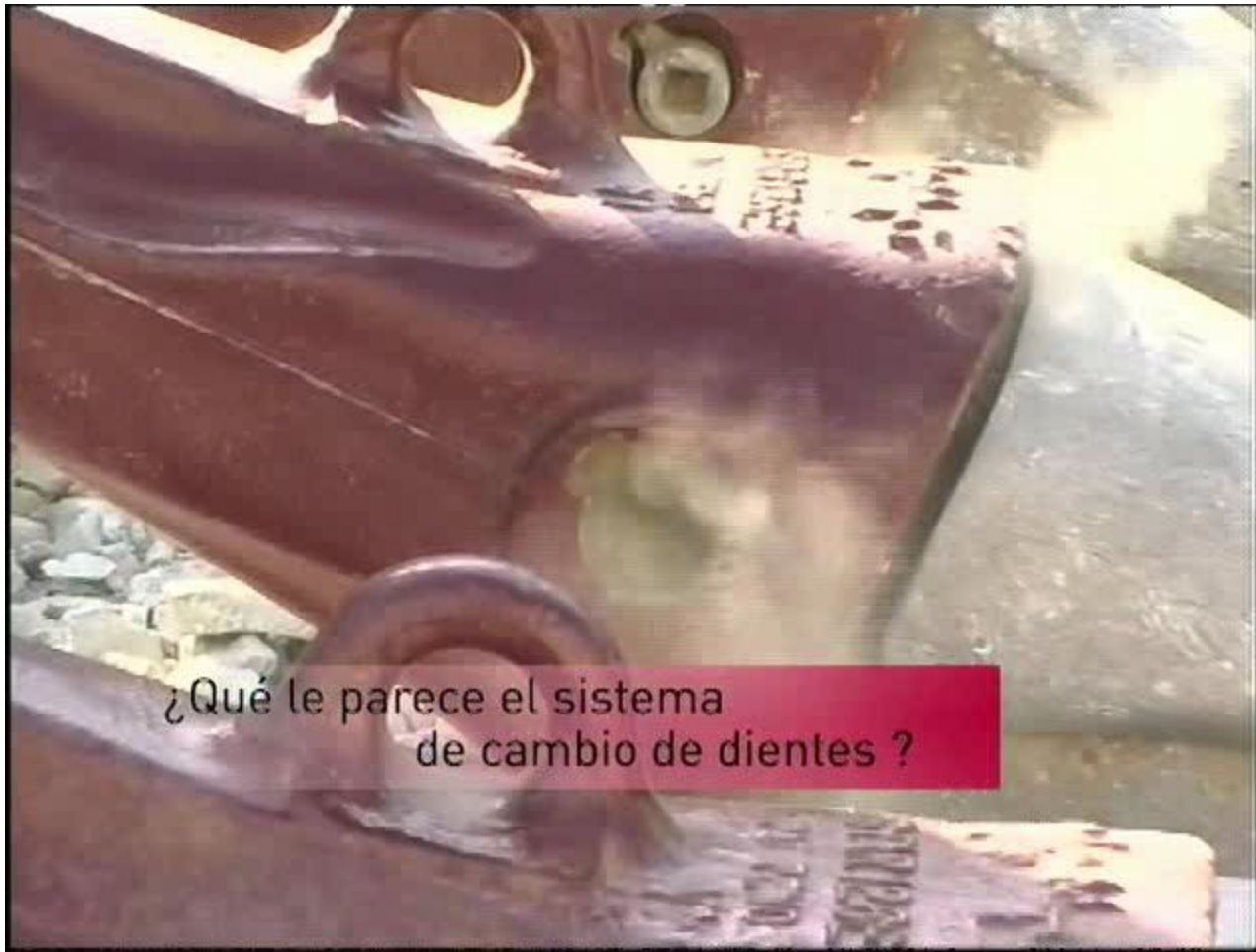


Este diente, ¿se autoafila ?

***Is the teeth  
self-sharpening?***

- Yes, the ones we used before usually had the tip like a fist...these ones stay sharp.





***What do you think about the changing of teeth?***

- Now it's very easy to change them. It's very fast.
- Now there's no hammering, you just turn the key, which means much more safety.






¿Qué diferencia ha notado en la duración ?

***What difference have you noted in the duration of the teeth?***

- We don't consume as many teeth as before.







¿Qué beneficios aporta a su trabajo?

***How does it benefit your work?***

- The teeth are very easy to change. It's faster, they last longer...  
They're much better
- They last more than twice the time than the ones we used before





***What do you think of MTG service?***

- So far, great, we can't complain at all.



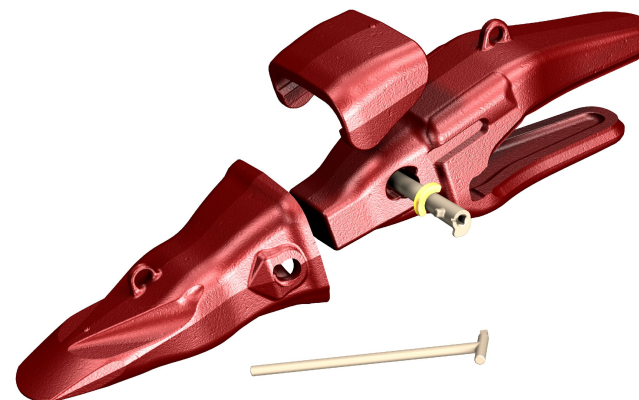


***In one word, what do you think about StarMet?***

- It's almost reaching... perfection.



# REFERENCE S



Size	120	180	240	500
Teeth E	MA120E	MA180E	MA240E	MA500E
Teeth H	MA120H	MA180H	MA240H	
Teeth I	MA120I	MA180I		
Teeth P	MA120P	MA180P	MA240P	MA500P
Teeth V	MA120V	MA180V	MA240V	MA500V
Adapter	1MA120WC (90mm / 3.54in)	1MA180WC (102mm / 4.02in)	1MA240WC (120mm / 4.72in)	1MA500WC (140mm / 5.51in)
	1MA120WC3 (80mm / 3.15in)	1MA180WC3 (90mm / 3.54in)	1MA240WC3 (100mm / 3.94in)	1MA500WC3 (127mm / 5.00in)
	1MA120WC5 (70mm / 2.76in)	1MA180WC5 (80mm / 3.15in)		1MA500WC5 (120mm / 4.72in)
	1MA120WC7 (64mm / 2.52in)	1MA180WLD5_WRD5 (80mm / 3.15in)		1MA500WC7 (100mm / 3.94in)
Wear Cap	4MA120M	4MA180M	4MA240M	4MA500M
Pin	2MA120PR	2MA180PR	2MA240PR	2MA500PR
Retainer	2MA120R	2MA180/240R		2MA500R
Tool	3MTWIST X			

# Safe and profitable!

