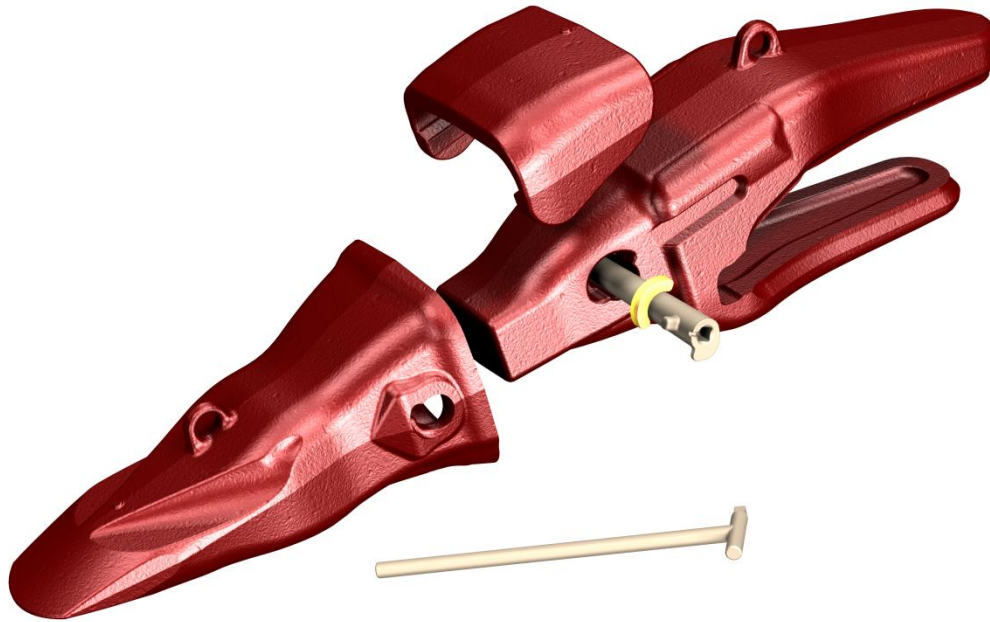




Safe and profitable!



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

Size selection



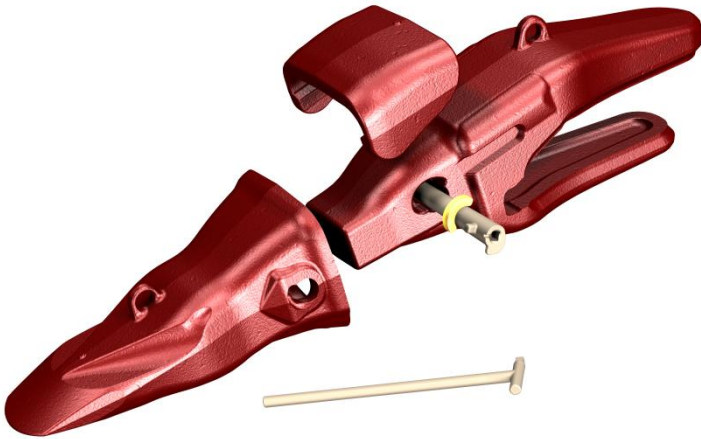
Size		(Min-Max)		(Min-Max)		(Min-Max)	
		STD	HD	STD	HD	STD	HD
120	(*) BOF (kN)	383 - 477	312 - 383	452 - 563	366 - 452	703 - 904	579 - 703
	Machine Weigh	85 - 120	65 - 90	80 - 110	60 - 85	100 - 148	84 - 100
180	(*) BOF (kN)	477-613	383 - 499	563 - 704	452 - 591	904 - 1139	703 - 886
	Machine Weigh	120-185	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

1. Greater safety
2. Longer service life
3. Increased savings and productivity



MTG Systems StarMet

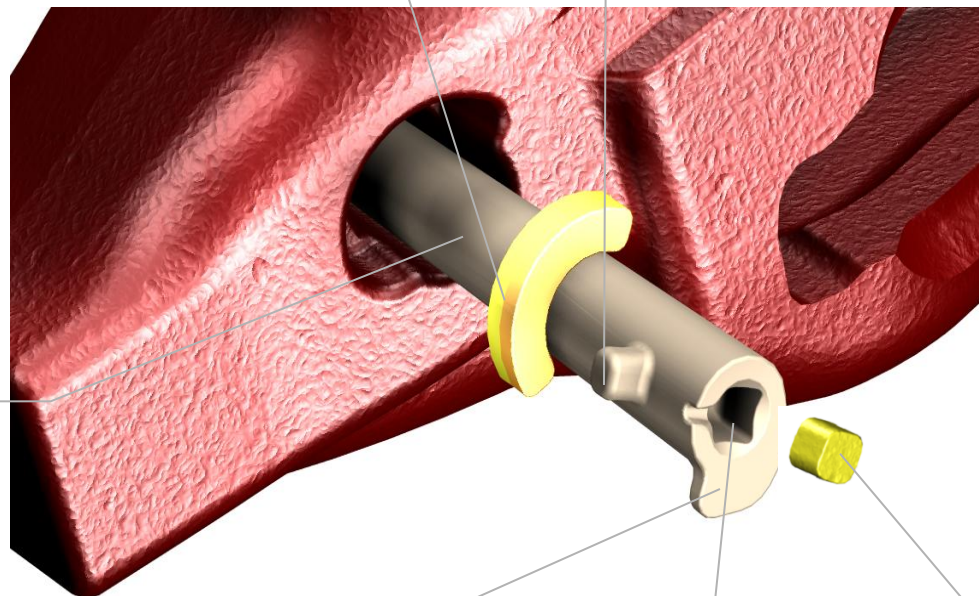
uses **MTG twist**,
the innovative
hammerless solution for
mounting



Conical Pin Body
Easier extraction

**Elastomet
retainer**

**Locking
arm**



**Extraction
arm.**

**Square cavity for a
standard square key**

Plug

This innovative solution offers **SAFETY**:

For the tooth change:

- **Safety:** No accidents
- **Comfort:** Effort lower than using a hammer
- **Easier to use**



Assembly instructions



Recommended equipment.



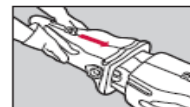
Position the bucket



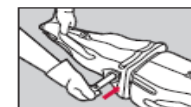
Clean adapter



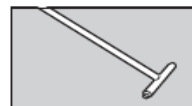
Push in retainer



Place the tooth



Push in the pin



Use Removal tool



Rotate the pin



Attach the plug

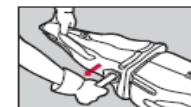
Disassembly instructions



Remove the plug



Rotate the pin



Remove the pin

This innovative solution offers SAFETY:

When operating:

- Safer holding mechanism:
Excellent retention





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

Locking system
Re-usable pin.



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




Tooth E

Extra



For large excavators in highly abrasive applications requiring good penetration.

SIZES AVAILABLE: 120, 180, 240 and 500.

	 kgs / lbs	Kgs. WM	% WM
MA500E	78,3	41,3	52,7%
V81SD	72,3	36,5	50,6%
	8,4%	13,1%	
MA240E	50,5	28,3	56,0%
V71SD	46,0	25,0	54,3%
	9,8%	13,2%	
MA180E	42,0	25,0	59,5%
V69SD	39,0	22,7	58,2%
	7,7%	10,1%	
MA120E	28,5	16,2	56,8%
V61SD	25,9	14,1	54,4%
	10,1%	14,9%	




Tooth V

Vector



For large excavators working in very compacted terrain guaranteeing maximum penetration.

SIZES AVAILABLE: 120, 180, 240 and 500.

	 kgs / lbs	Kgs. WM	% WM
MA500V	72,2	35,1	48,6%
V81VX	66,0	30,3	45,9%
	9,4%	15,8%	

MA240V	45,2	23,0	50,0%
V71VX	41,3	20,0	48,4%
	9,4%	15,0%	

MA180V	33,9	16,8	49,5%
V69VX	31,0	14,7	47,4%
	9,4%	14,1%	


MA120V	24,3	12,1	49,8%
V61VX	22,0	10,9	49,5%
	10,5%	11,0%	



Tooth P

Penetration



	 kgs / lbs	Kgs. WM	% WM
MA500P	68,1	31,1	45,7%
MA240P	41,4	18,8	45,4%
MA180P	33,2	16,1	48,5%
MA120P	22,8	10,6	46,3%

For applications where shorter teeth are required but also penetration is needed

For large excavators in compacted terrain that require a high degree of penetration and excellent resistance.

SIZES AVAILABLE: 120, 180, 240 and 500.




Tooth I

Impact



For large excavators and loaders on terrain with a high degree of impact guaranteeing maximum resistance.

SIZES AVIALABLE: 120 and 180

	 kgs / lbs	Kgs. WM	% WM
MA180I	36,6	19,5	53,3%
V69RYL	36,0	18,7	51,9%
	1,7%	4,3%	
MA120I	24,2	11,8	48,8%
V61RY	22,2	10,2	45,9%
	8,9%	15,7%	



Tooth A

Abrasion



COMING 2007

For loaders working in loose terrain where there is a high level of abrasion and good penetration is required.

SIZES AVAILBALE: 120, 180 and 240.

*This is a prototype which is subject to change.

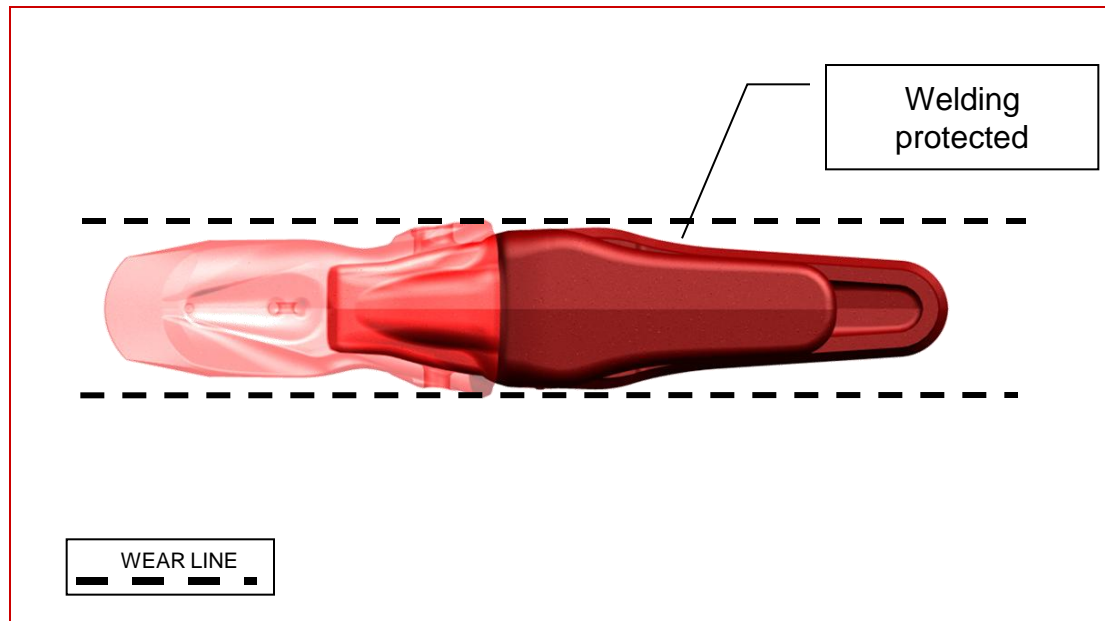
WEAR PROTECTION Longer Adapter Life

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



WEAR PROTECTION

Adapter geometry helps protect the welding area from wear.



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



FITTING SYSTEM

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

Stabilization surfaces

- Reduce plastic deformation



FITTING SYSTEM

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

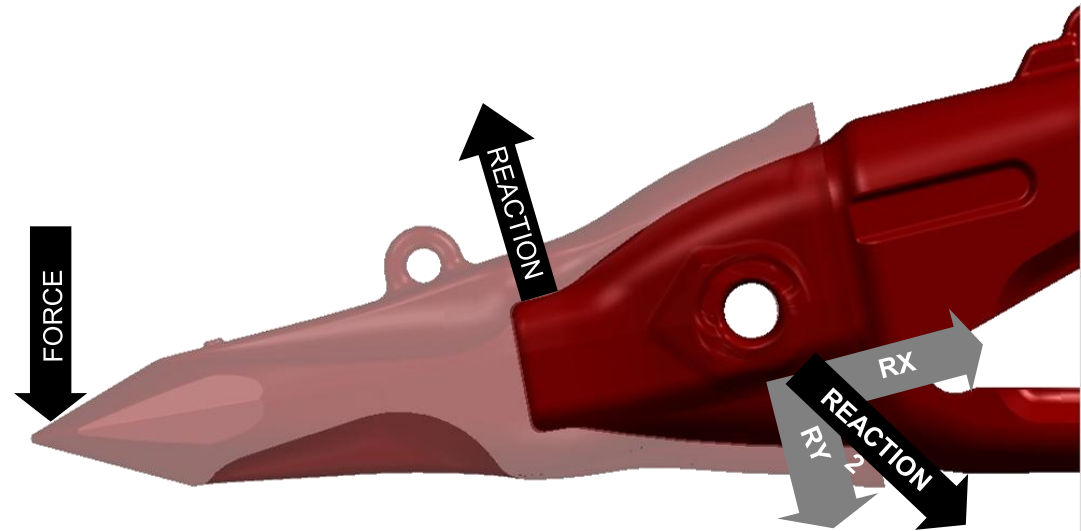
- **Smooth surfaces** in critical areas help to distribute stress while working.
- No stress concentration



LOCKING SYSTEM

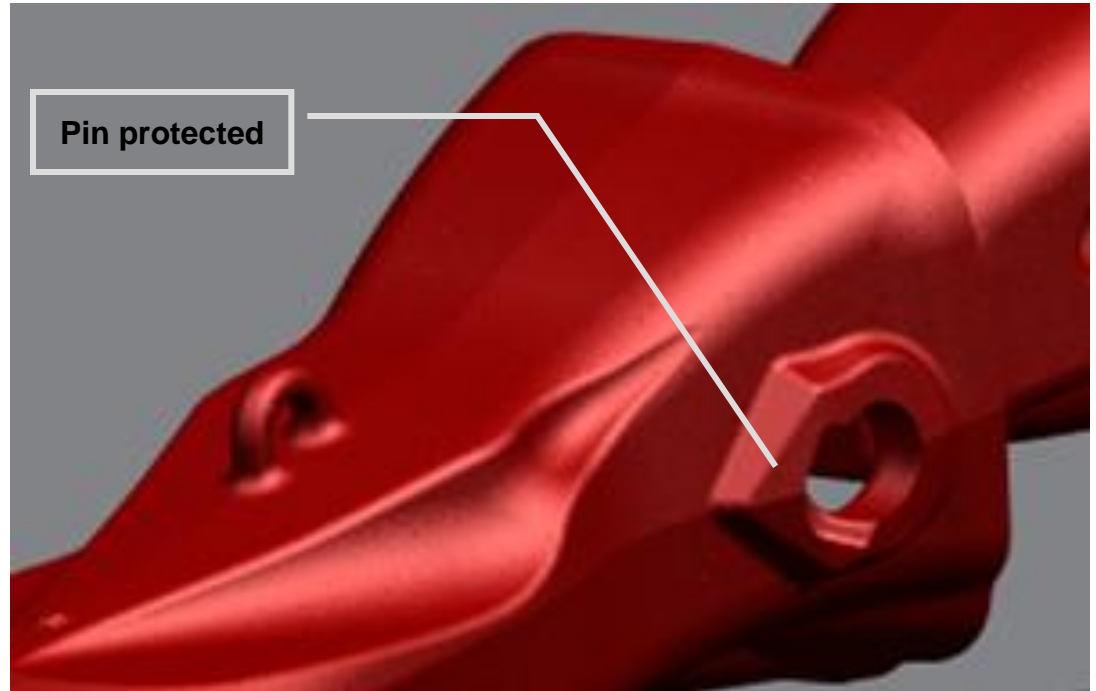
Re-usable pin.

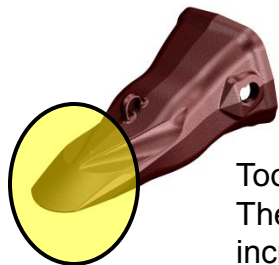
- Reactions to applied loads help maintain the system tight
- The pin suffers no stress



LOCKING SYSTEM

Re-usable pin.





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.



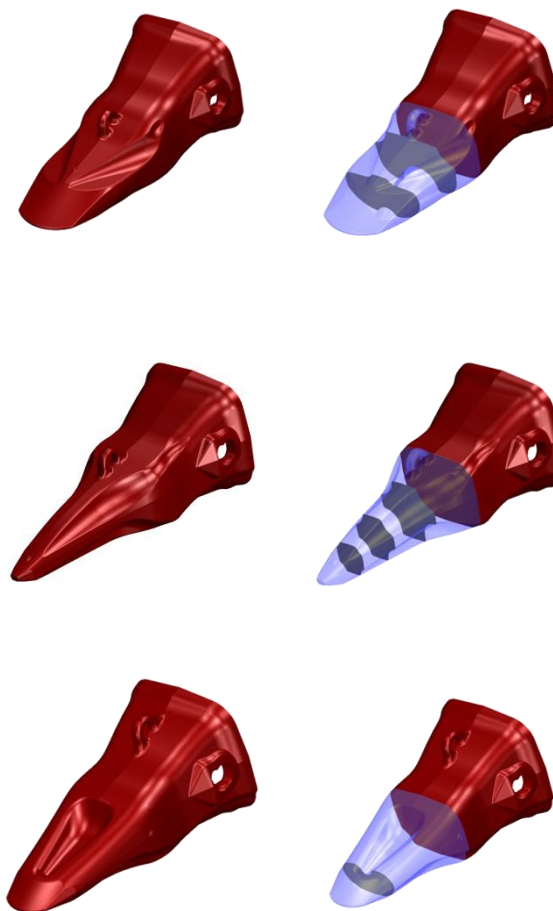
MTG Steels
Steels with longer life and fewer breakages.

TEETH STAY ALWAYS SHARP

Better bucket penetration

Excellent penetration throughout its service life.

- Less consumption for the machine



Better bucket penetration

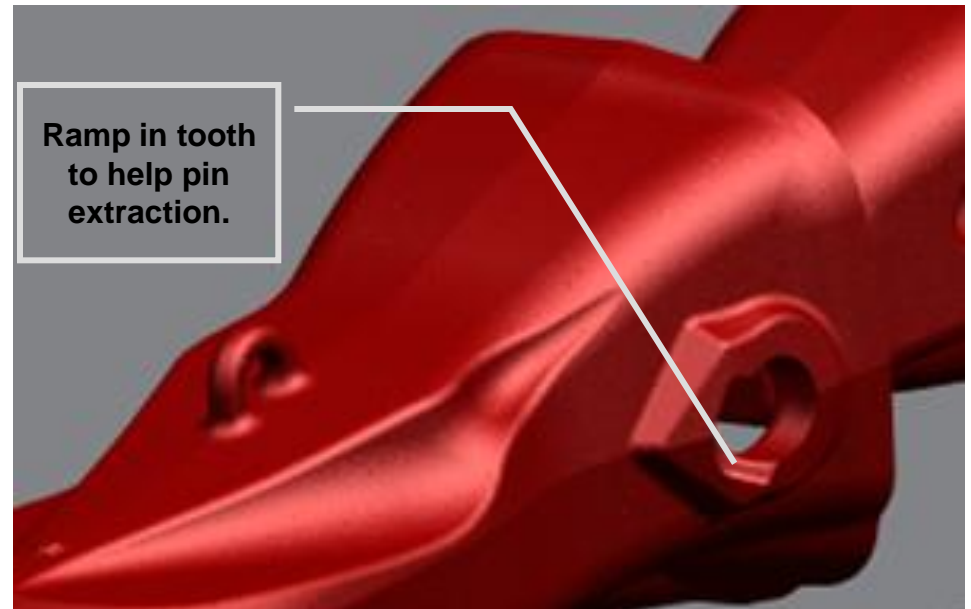
- Integrated geometry Tooth-Wearcap-Adapter allows good flow of material



QUICK ASSEMBLY AND DISASSEMBLY

TO FACILITATE EXTRACTION:

- Conical Pin
- Breaking the compacted fines:
Easier extraction



**QUICK ASSEMBLY
AND DISASSEMBLY**



PROVEN RESULTS

Size	Machine	Terrain - Location	Teeth Design	Sets Consummed	Working Hours
126	CAT 365B	Granite Quarry - Spain	E	12	3512
	CAT 365B*	Granite Quarry- Spain	E	3	850
	LIEBHERR 984	Gravel Quarry (Old river bed)- Spain	V	25	3238
	CAT 375	Granite quarry- France	E	5	1680
	LIEBHERR 974	Limestone quarry - France	E	1	1120
	HITACHI 700	Gravel quarry (Old river bed) Special penetration bucket, 3 teeth- Spain	V	4	N.A.
251	PC3000	Coal mine (excavating sterile)- Spain	V	13	2834
	CAT 5110	Porfid Quarry- Germany	E	6	1930
	CAT 5130	Coal mine (excavating sterile)- Spain	E	1	Strike
	PC750	Loading and ripping demolition- Germany	V	1	N.A.
	LIEBHERR 984	Special Ripper bucket (3 teeth)- Germany	V	1	N.A.
	PC1250	Porfid Quarry- Germany	E	1	260

* Same machine, different bucket.

PROVEN RESULTS

- **Very good behaviour of the fit. Good contact surfaces during lifetime.**
- **Good behaviour of the adapter regarding wear (abrasive application) even without wear cap.**
- **Wear cap lifetime: 3/4 teeth changes in high abrasion**
- **Good behaviour of the pin. Reusable several times.**
- **Very safe. No losses of teeth. The pin maintains its position. Excellent retention**

PROVEN RESULTS

- Machine:** Caterpillar 5110B
- Distributor:** GP-Baumaschinen GmbH Halle; Germany
- Type of terrain:** Loose rock with porfid quartz , extremely abrasive.
- Contac person:** Frank Pohle.
- User:** SQW GmbH Werk Lüptitz.
- Date:** June 2006.

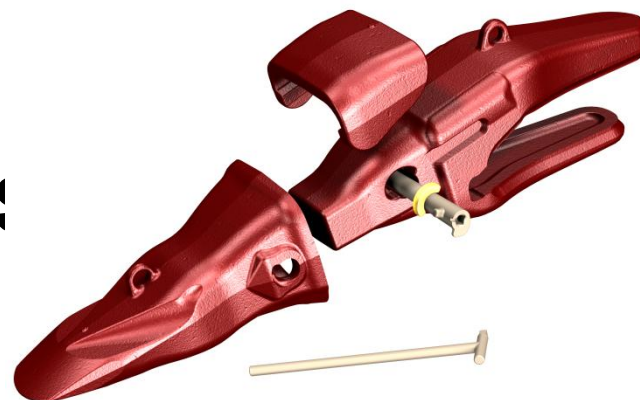


What is your opinion about MTG Systems Starmet product?

- So far, from all products we have tried, StarMet is the best one.
- **What benefits did you get when comparing against the previous product you had?**
 - Better penetration due to the self-sharpening teeth.
 - Longer teeth wear life.
 - Change of teeth easy and fast.



SCHEDULE AND REFERENCES



Size (*)	120	180	240	500
Teeth E	MA120E	MA180E	MA240E	MA500E
Teeth P	MA120P	MA180P	MA240P	MA500P
Teeth V	MA120V	MA180V	MA240V	MA500V
Adapter	1MA120WC (90mm)	1MA180WC (102mm)	1MA240WC (120mm)	1MA500WC (140mm)
	1MA120WC3 (80mm)	1MA180WC3 (90mm)	1MA240WC3 (100mm)	1MA500WC3 (127mm)
	1MA120WC5 (70mm)	1MA180WC5 (80mm)		1MA500WC5 (120mm)
	1MA120WC7 (64mm)			
Wear Cap	4MA120M	4MA180M	4MA240M	4MA500M
Pin	2MA120PR	2MA180PR	2MA240PR	2MA500PR
Retainer	2MA120R	2MA180R	2MA240R	2MA500R
Tool	3MA120/500T			

(*) All sizes are available

