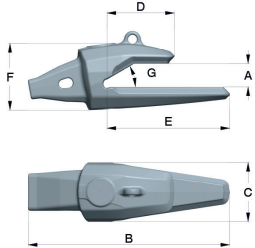


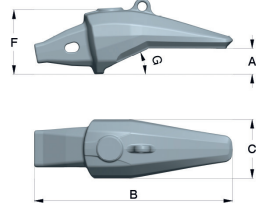


R10 Specifications

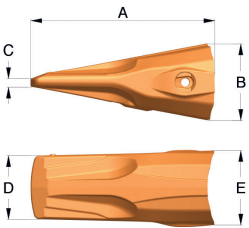
Teeth, Adapters, Accessories



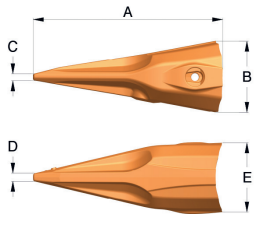
BE 



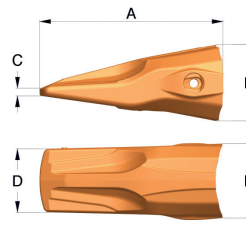
SL  



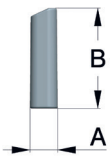
GPE 



VE 



GPL 















LP  



LT  

Typical machine weight - Excavator 12-14 MT
Maximum breakout force in HD/XHD (ISO) 88 kN

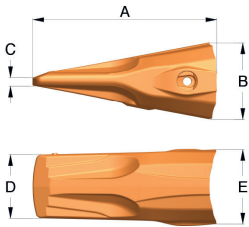
Typical machine weight - Loader 12-14 MT
Maximum breakout force in HD/XHD (ISO) 158 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
BE	R10BE25			27	281	83	95	171	90	30°	5.5
SL	R10SL20			20 (20-30)	278	83	N/A	N/A	88	25°	6.2
GPE	R10GPE			208	86	10	72	84			3.2
VE	R10VE			228	86	8	10	84			2.7
GPL	R10GPL			208	86	9	72	84			3.5
LP	R10LP			19	69						0.1
LT	R10LT			358	62						0,4

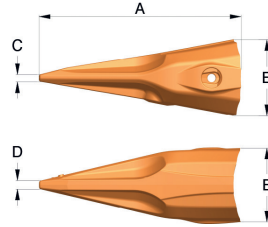


R14 Specifications

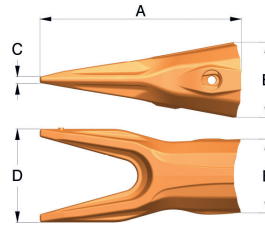
Teeth



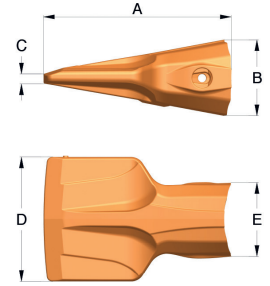
GPE 



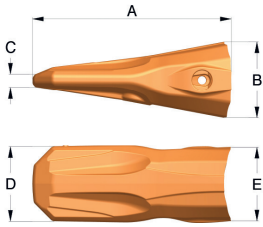
VE 



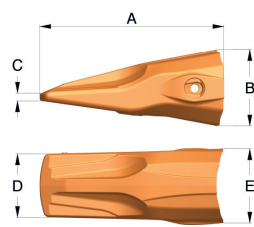
WE 



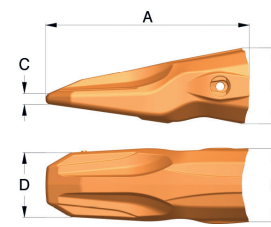
FE 



AE 












GPL 



AL 

Typical machine weight - Excavator 14-17 MT
Maximum breakout force in HD/XHD (ISO) 112 kN

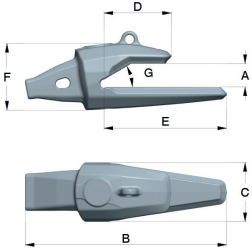
Typical machine weight - Loader 14-17 MT
Maximum breakout force in HD/XHD (ISO) 202 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
GPE	R14GPE			240	100	11	83	97			4.7
VE	R14VE			265	100	9	10	97			4.3
WE	R14WE			265	100	9	123	97			5.1
FE	R14FE			240	100	13	156	97			6.0
AE	R14AE			262	100	18	98	97			6.3
GPL	R14GPL			240	100	10	83	97			5.5
AL	R14AL			269	100	15	85	97			7.3

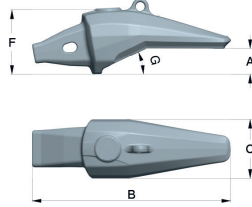


R14 Specifications

Adapters, Accessories



BE 












SL 



LP 



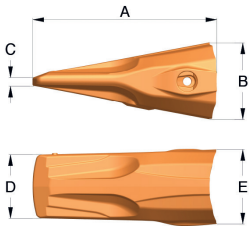
LT 

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
BE	R14BE30			32	325	96	110	198	103	30°	8.7
BE	R14BE40			42	325	96	110	198	103	30°	8.7
SL	R14SL30			30 (30-40)	322	96	N/A	N/A	101	25°	9.5
LP	R14LP			22	80						0.2
LT	R14LT			383	65						0.6

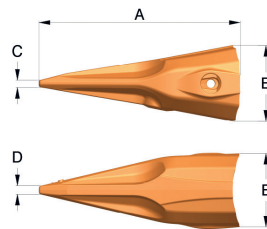


R18 Specifications

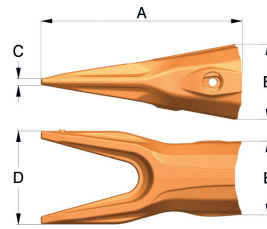
Teeth



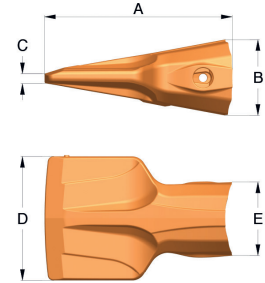
GPE 



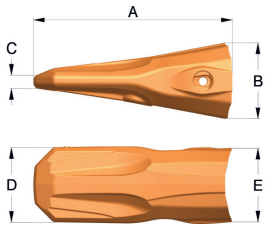
VE 



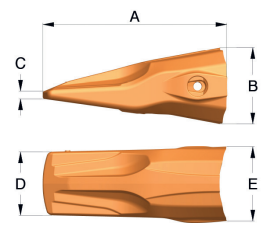
WE 



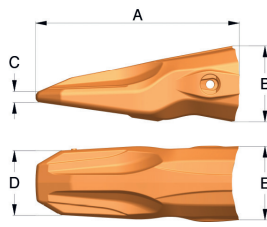
FE 



AE 












GPL 



AL 

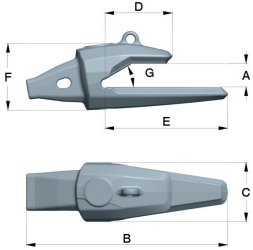
Typical machine weight - Excavator	17-25 MT
Maximum breakout force in HD/XHD (ISO)	147 kN
Typical machine weight - Loader	17-25 MT
Maximum breakout force in HD/XHD (ISO)	265 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	Weight kg
GPE	R18GPE			267	111	12	92	108	6.8
VE	R18VE			294	111	11	11	108	5.9
WE	R18WE			294	111	11	137	108	7.0
FE	R18FE			273	111	14	182	108	9.2
AE	R18AE			290	111	20	109	108	8.5
GPL	R18GPL			267	111	11	92	108	7.6
AL	R18AL			298	111	17	94	108	9.9

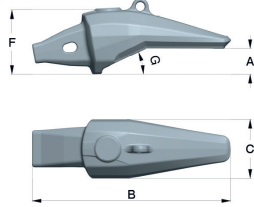


R18 Specifications

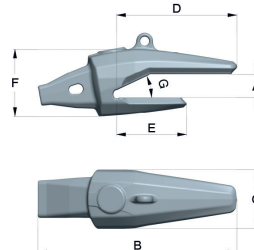
Adapters, Accessories



BE 



SL 














TL 



LP 



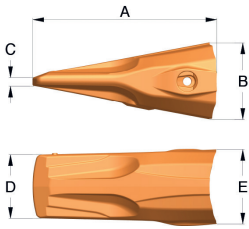
LT 

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
BE	R18BE40			42	361	106	120	220	119	30°	11.9
BE	R18BE45			47	362	106	119	221	119	30°	12.0
SL	R18SL30			30 (30-40)	357	106	N/A	N/A	114	25°	12.8
TL	R18TL40			42	356	106	215	125	121	25°	12.9
LP	R18LP			25	90						0.2
LT	R18LT			408	65						0.6

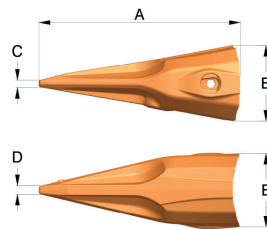


R23 Specifications

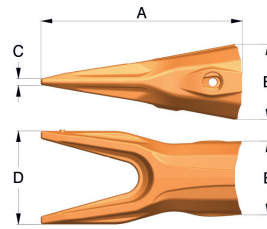
Teeth



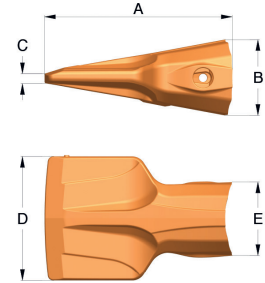
GPE 



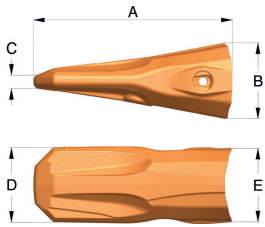
VE 



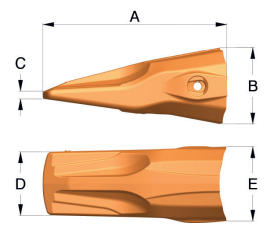
WE 



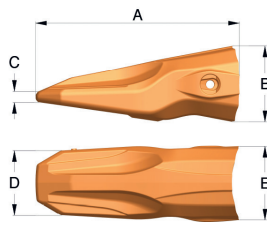
FE 



AE 



GPL 












AL 

Typical machine weight - Excavator
Maximum breakout force in HD/XHD (ISO)

25-35 MT
184 kN

Typical machine weight - Loader
Maximum breakout force in HD/XHD (ISO)

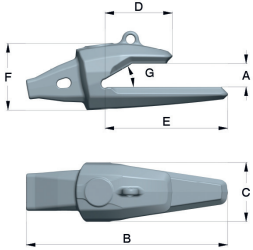
25-35 MT
331 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	Weight kg
GPE	R23GPE			301	125	14	104	122	9.6
VE	R23VE			332	125	12	13	122	8.5
WE	R23WE			332	125	12	155	122	9.9
FE	R23FE			309	125	16	205	122	12.9
AE	R23AE			328	125	22	123	122	12.4
GPL	R23GPL			301	125	13	104	122	10.8
AL	R23AL			337	125	19	107	122	14.3

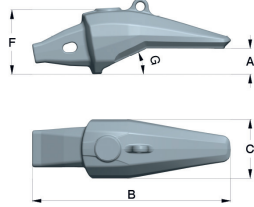


R23 Specifications

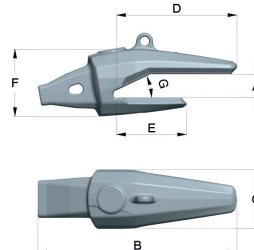
Adapters, Accessories



BE 



SL 














TL 



LP 



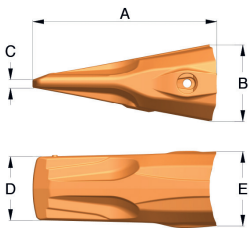
LT 

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
BE	R23BE40			42	408	120	137	249	130	30°	17.5
BE	R23BE50			52	408	120	137	249	130	30°	17.2
SL	R23SL40			40 (40-50)	404	120	N/A	N/A	127	25°	18.3
TL	R23TL40			42	403	120	244	140	130	25°	18.6
LP	R23LP			28	102						0.3
LT	R23LT			435	69						0.9

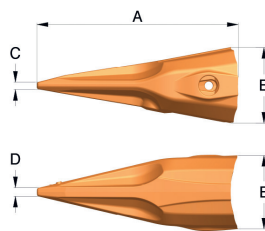


R29 Specification

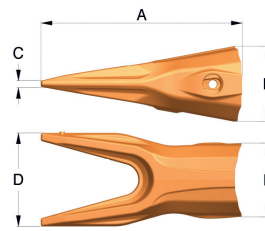
Teeth



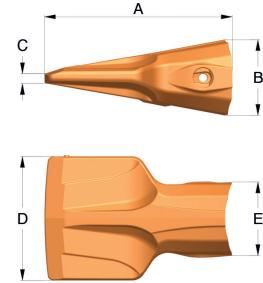
GPE 



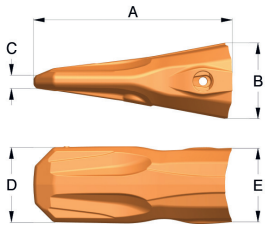
VE 



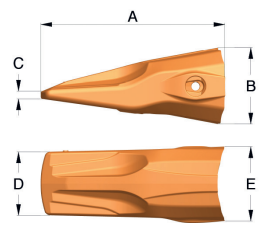
WE 



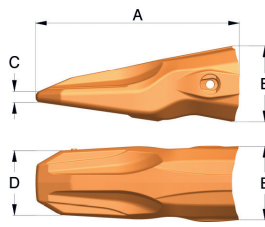
FE 



AE 



GPL 












AL 

Typical machine weight - Excavator
Maximum breakout force in HD/XHD (ISO)

35-45 MT
233 kN

Typical machine weight - Loader
Maximum breakout force in HD/XHD (ISO)

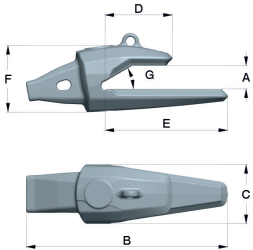
35-45 MT
419 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	Weight kg
GPE	R29GPE			331	138	15	115	134	12.6
VE	R29VE			340	138	15	15	134	10.9
WE	R29WE			365	138	13	170	134	13.0
FE	R29FE			340	138	18	226	134	17.1
AE	R29AE			361	138	24	136	134	16.6
GPL	R29GPL			331	138	14	115	134	14.7
AL	R29AL			371	138	21	117	134	18.9

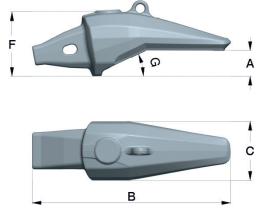


R29 Specifications

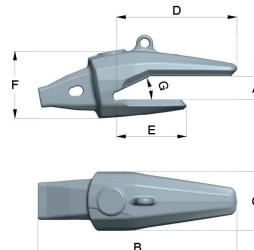
Adapters, Accessories



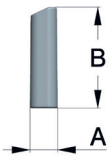
BE 



SL 














TL 



LP 



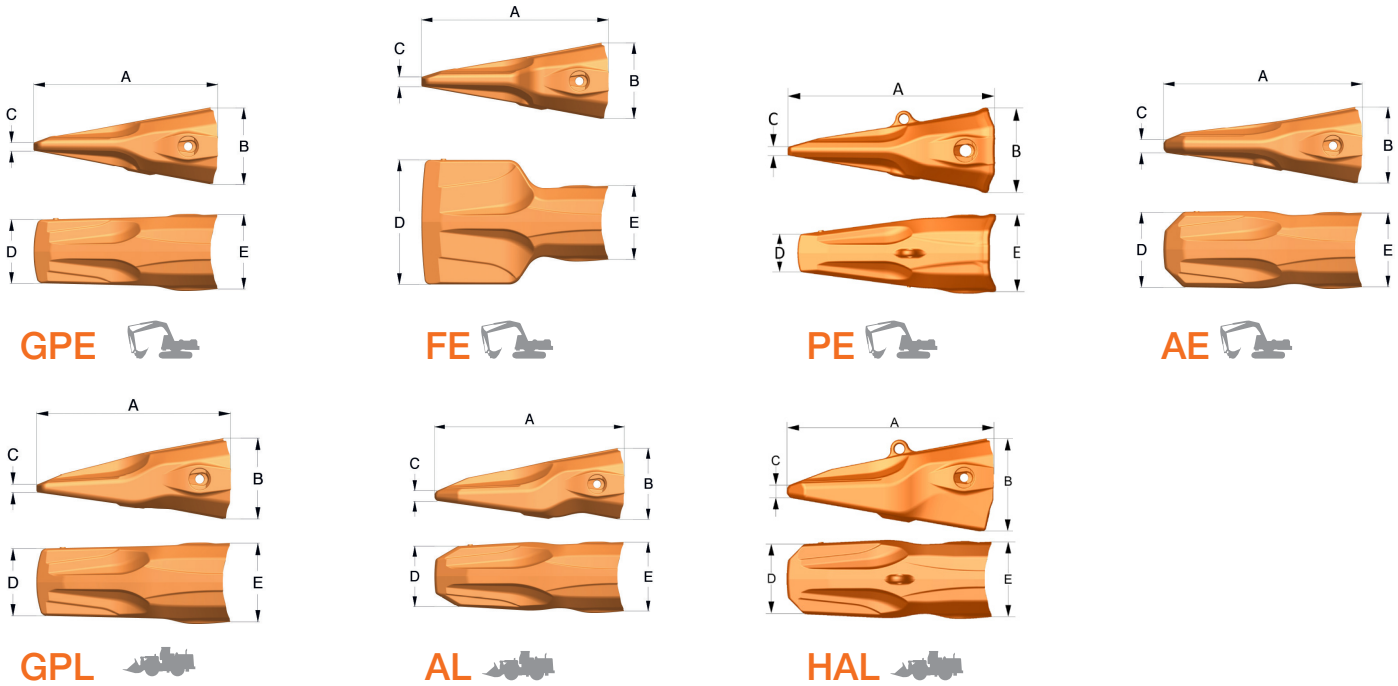
LT 

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
BE	R29BE50			52	449	132	150	274	148	30°	23.7
BE	R29BE60			62	449	132	148	274	148	30°	23.6
SL	R29SL50			50 (50-65)	444	132	N/A	N/A	144	25°	21.2
TL	R29TL50			52	443	132	268	156	150	25°	24.8
LP	R29LP			31	112						0.4
LT	R29LT			460	70						1.0



R35 Specifications

Teeth



















Typical machine weight - Excavator
Maximum breakout force in HD/XHD (ISO)

40-50 MT
296 kN

Typical machine weight - Loader
Maximum breakout force in HD/XHD (ISO)

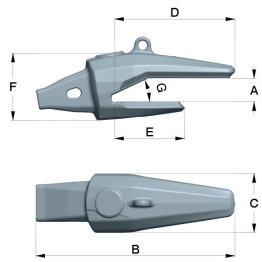
45-55 MT
510 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
GPE	R35GPE			374	156	18	130	151			18.7
FE	R35FE			385	156	21	255	151			25.2
PE	R35PE			410	156	21	90	151			21.2
AE	R35AE			407	156	27	153	151			23.8
GPL	R35GPL			375	156	16	130	151			21.0
AL	R35AL			419	156	23	133	151			28.0
HAL	R35HAL			419	186	27	157	151			36.3

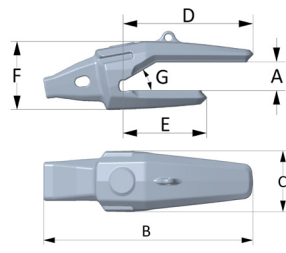


R35 Specifications

Adapters, Accessories



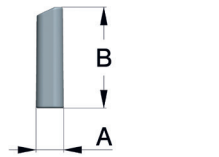
TL 



UA 



















WC 



LP 



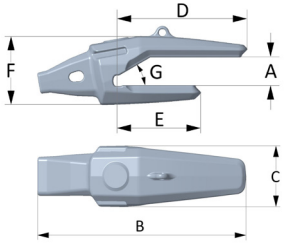
LT 

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
TL	R35TL65			67	501	149	303	174	170	30°	34.3
UA	R35UA60			62	500	149	306	198	163	30°	32.9
UA	R35UA65			67	500	149	304	198	163	30°	32.5
UA	R35UA70			72	500	149	301	192	163	30°	32.4
WC	R35WC			172	78	127					4.4
LP	R35LP			34	127						0.6
LT	R35LT			485	75						1.1



R50 Specifications

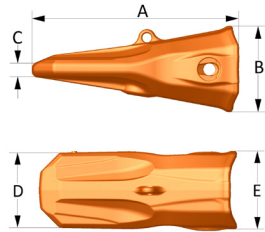
Teeth, Adapters, Accessories



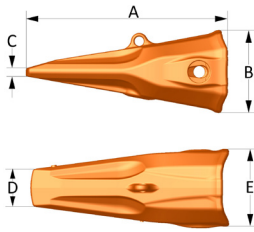
UA 



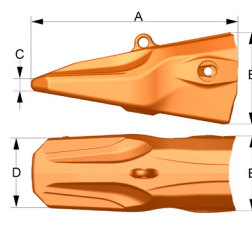
WC 



AE 



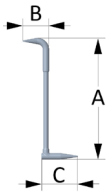
PE 



HAL 

































LP 



LT 

Typical machine weight - Excavator 50-80 MT
Maximum breakout force in HD/XHD (ISO) 400 kN

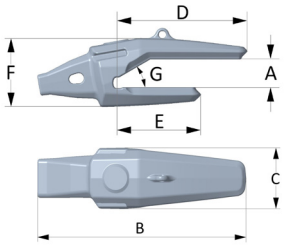
Typical machine weight - Loader 80-100 MT
Maximum breakout force in HD/XHD (ISO) 720 kN

Type	Part. no				A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
UA	R50UA70				72	583	171	362	233	190	30°	51.6
UA	R50UA75				77	583	171	359	230	190	30°	51.3
UA	R50UA80				82	583	171	356	227	190	30°	50.7
WC	R50WC				198	88	144					5.5
AE	R50AE				448	186	32	171	178			33.4
PE	R50PE				454	186	20	87	178			28.4
HAL	R50HAL				461	224	31	160	178			53.1
LP	R50LP				40	146						1.0
LT	R50LT				422	91	125					1.1



R70 Specifications

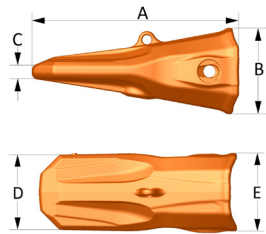
Teeth, Adapters, Accessories



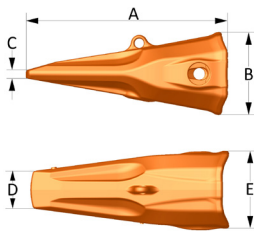
UA 



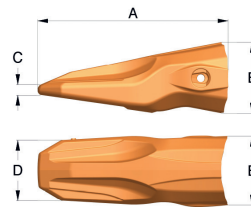
WC 



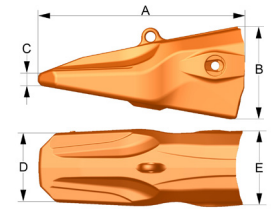
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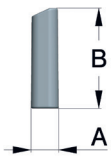
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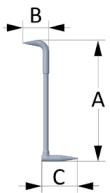
AL 



HAL 



LP 




































LT 

Typical machine weight - Excavator 80-120 MT
Maximum breakout force in HD/XHD (ISO) 576 kN

Typical machine weight - Face shovel 80-120 MT
Maximum breakout force in HD/XHD (ISO) 720 kN

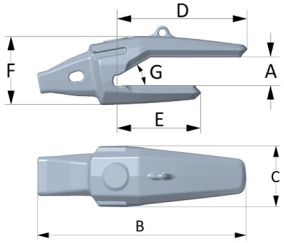
Typical machine weight - Loader 100-150 MT
Maximum breakout force in HD/XHD (ISO) 1037 kN

Type	Part. no				A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
UA	R70UA75				77	707	199	409	263	215	30°	91.3
UA	R70UA90				92	707	199	409	263	224	30°	90.3
UA	R70UA100				102	738	199	409	263	241	30°	101.8
WC	R70WC				229	101	178					9.2
AE	R70AE				505	220	35	198	210			50.3
PE	R70PE				510	220	32	116	210			45.8
AL	R70AL				513	220	35	176	210			61.5
HAL	R70HAL				513	258	35	187	210			78.0
LP	R70LP				46	169						1.4
LT	R70LT				422	91	125					1.1

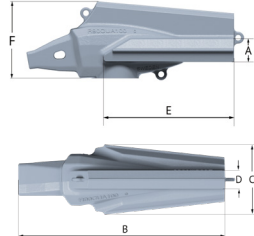


R90 Specifications

Teeth, Adapters, Accessories



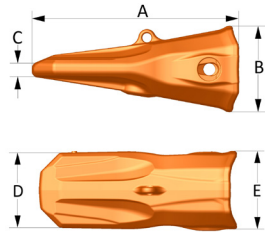
UA   



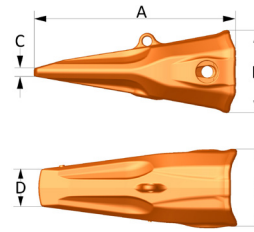
CUA   



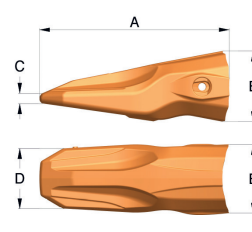
WC   



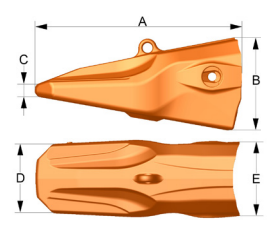
AE  



PE  



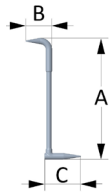
AL  



HAL  



LP   

































LT   

Typical machine weight - Excavator 120-200 MT
Maximum breakout force in HD/XHD (ISO) 720 kN

Typical machine weight - Face shovel 120-200 MT
Maximum breakout force in HD/XHD (ISO) 900 kN

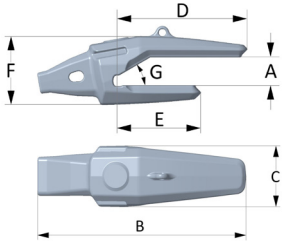
Typical machine weight - Loader 200-250 MT
Maximum breakout force in HD/XHD (ISO) 1296 kN

Type	Part. no				A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
UA	R90UA100				102	784	221	454	322	275	30°	136.0
CUA	R90CUA100				102	895	300	565	565			230.0
WC	R90WC				247	112	197					12.0
AE	R90AE				548	238	38	220	230			68.5
PE	R90PE				553	238	35	131	230			62.1
AL	R90AL				558	238	35	196	230			82.6
HAL	R90HAL				558	282	38	208	230			104.6
LP	R90LP				51	188						1.9
LT	R90LT				422	91	165					1.2

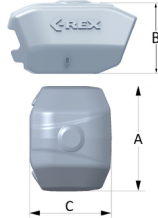


R110 Specifications

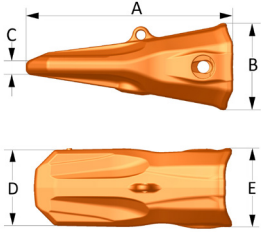
Teeth, Adapters, Accessories



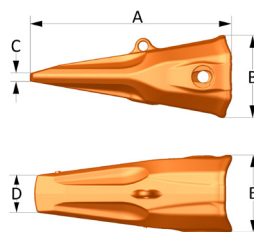
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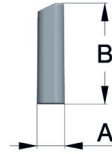
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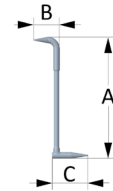
AE 



PE 
















LP 



LT 

Typical machine weight - Excavator 200–250 MT
Maximum breakout force in HD/XHD (ISO) 880 kN

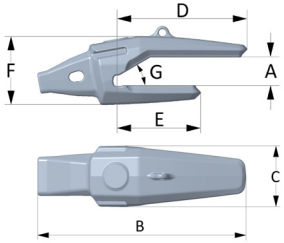
Typical machine weight - Face shovel 200–250 MT
Maximum breakout force in HD/XHD (ISO) 1100 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
UA	R110UA120			122	863	243	493	315	287	30°	156.6
WC	R110WC			272	122	217					17.3
AE	R110AE			603	262	42	242	253			92.2
PE	R110PE			608	262	39	144	253			83.4
LP	R110LP			56	207						2.5
LT	R110LT			427	91	165					1.3

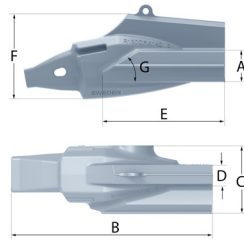


R130 Specifications

Teeth, Adapters, Accessories



UA  



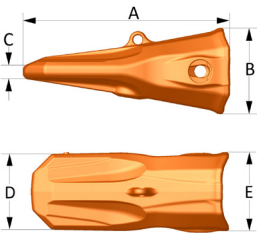
CLA CRA  



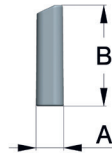
WC  



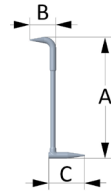
WCC  



AE  





















LP  



LT  

Typical machine weight - Excavator 250–350 MT
Maximum breakout force in HD/XHD (ISO) 1050 kN

Typical machine weight - Face shovel 250–390 MT
Maximum breakout force in HD/XHD (ISO) 1300 kN

Type	Part. no			A mm	B mm	C mm	D mm	E mm	F mm	G bevel	Weight kg
UA	R130UA140			142	921	268	554	372	327	30°	201.5
CLA	R130CLA140			140	947	320	90	580	400	30°	370
CRA	R130CRA140			140	947	320	90	43	400	30°	370
WC	R130WC			296	129	241					18.1
WCC	R130WCC			296	129	237					17.2
AE	R130AE			656	296	49	270	283			125
LP	R130LP			60	233						3.1
LT	R130LT			427	91	165					1.2



Excavator Teeth and adapters

ADAPTER

BE	SL	UA	CUA/CLA/CRA
A 1 1/2 bottom leg adapter. Designed for both general and tough excavation in different types of ground.	Top mounted single leg adapter designed for use in general conditions whenever a smooth surface is required.	A 1 1/2 top leg adapter. Designed for both excavators and loaders. Can be used with or without a wear cap.	Corner adapters. Designed for both excavators and loaders. Can be used with or without a wear cap.

WEAR CAP

LOCK

WC/WCC	LP	LR
Mechanical wear cap protects the adapter topside in high abrasion and impact applications.	Reusable locking pin of forged steel also usable in hot slag applications.	Locking ring integrated in the tooth. Secures the locking function and simplifies teeth exchange.

TOOTH

GPE	VE	WE	FE
Standard tooth with slim design for optimal penetration and durability in general purpose applications.	The tooth for maximum penetration. Makes light work of hard surface layers and frozen ground.	Used primarily in a corner position in combination with VE, this tooth provides the penetration demanded by hard surfaces.	An extra-wide tooth for excavating and cleaning – penetration and straight-edge performance from a single solution.

TOOTH

TOOTH

TOOL

AE	PE	LT
Abrasion tooth for highly abrasive soils and rocks such as granite, basalt and sandstone. The design provides maximal wear material with maintained good penetration.	Penetration tooth with added body mass and narrow tip combines penetration with impact and abrasion resistance.	Tool for turning the locking ring in locked and unlocked position.



Loader teeth and adapters

ADAPTER

SL	TL	UA	CUA/CLA/CRA
Top mounted single leg adapter designed for use in general conditions whenever a smooth surface is required.	A 1 1/2 top leg adapter. Designed for both general and tough loading in different types of ground conditions.	A 1 1/2 top leg adapter. Designed for both excavators and loaders. Can be used with or without a wear cap.	Corner adapters. Designed for both excavators and loaders. Can be used with or without a wear cap.

WEAR CAP

WC
Mechanical wear cap protects the adapter topside in high abrasion and impact applications.

LOCK

LP	LR
Reusable locking pin of forged steel also usable in hot slag applications.	Locking ring integrated in the tooth. Secures the locking function and simplifies teeth exchange.

TOOTH

GPL	AL	HAL
In both general and highly abrasive environments. This all-round tooth is popular for its excellent penetration.	Abrasion tooth with a high level of penetration. Recommended in blasted rock application.	Outstanding wear resistance combined with a high level of penetration. This tooth provides extra protection for the lower part of the adapter and is ideal where ground conditions are highly abrasive.

TOOL

LT
Tool for turning the locking ring in locked and unlocked position.



Application table

Application table Based on DIN 18300 ground classification

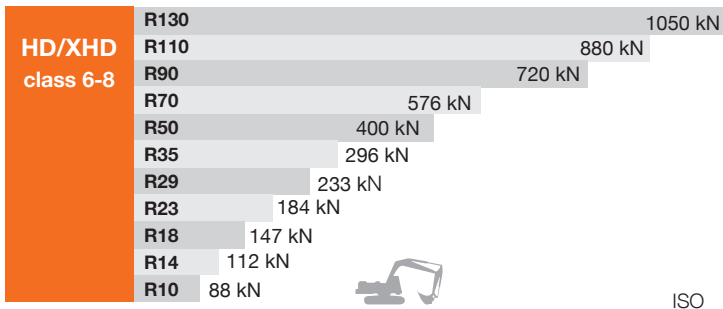
Ground classification	Description of ground conditions	Working conditions	Application
Class 1 Top soil without stones	Top layer of soil.	Very little wear. Very little penetration resistance. No impact resistance.	GP
Class 2 Wet ground	Sludge, mud, peat.	Little wear. Very little penetration resistance. No impact resistance.	GP
Class 3 Light ground	Sand, fine gravel, sandy soil. Stone size up to approx. 2,4 inch.	Moderate wear. Little penetration resistance. No impact resistance.	GP
Class 4 Moderately heavy ground	Very stony ground, gravel, stones. Stone size above 2,4 inch.	Considerable wear. Some penetration resistance. Moderate impact resistance.	GP / HD
Class 5 Dense, moderately heavy ground	Till, rigid clay, sand-clay mix, moraine, marl.	Considerable wear. Moderate penetration resistance. Little impact, some break through resistance.	HD
Class 6 Dense, heavy ground	Hard marl and clay, hard sandy ground, hard stony soil. Stone size up to approx. 7,9 inch.	Considerable wear. Considerable penetration resistance. Considerable impact and break through resistance.	HD
Class 7 Lighter rock	Loose rock, crumbled rock, slate. Very hard ground with stones, approx. 7,9 inch or bigger.	Usually considerable wear. Considerable penetration resistance. Considerable impact and break through resistance.	XHD
Class 8 Heavy rock	Blasted rock, size over 3,5 ft ³ .	Very significant wear. Considerable penetration resistance. Very significant impact and break through resistance.	XHD

For further information on welding, assembly and maintenance, see welding and assembly instructions.

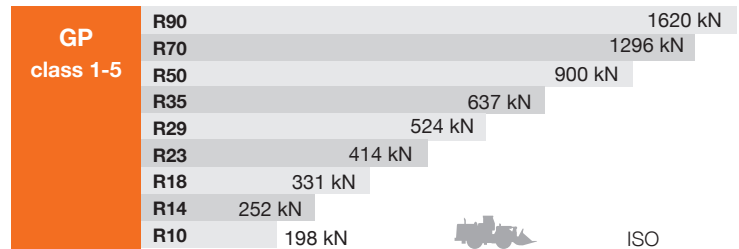
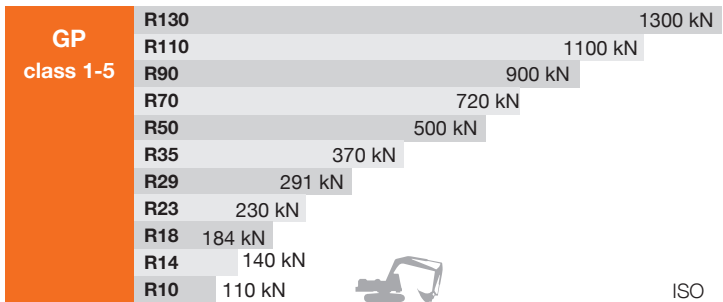
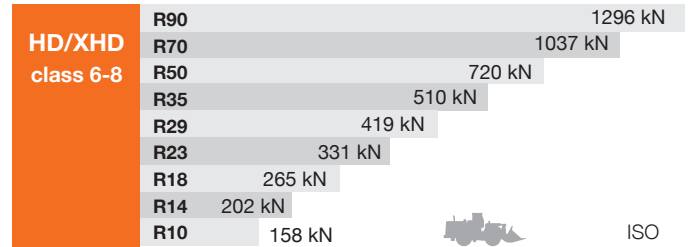


Selection guide

Breakout force diagram – Backhoe



Breakout force diagram – Loader



Breakout force diagram – Face shovel

