

INTERNATIONAL EDITION

engcon[®]

TOOLS CATALOGUE

Excavator



Equip your machine to secure profitability

As usual this year's catalogue has a number of new products for better efficiency and profitability. The most important new product is however a combination of a new concept – Non Accident Generation – and a completely new quick hitch system that lives up to the concept's high safety requirements, Q-Safe™.

Through the Non Accident Generation engcon is increasing focus on safety at the workplace. Through these efforts we will raise safety awareness to encompass the entire product programme; not just individual products. Every product from engcon that is branded "Non Accident Generation" sets a new safety standard and is designed and constructed to create as safe a workplace as possible.

With Q-Safe™ engcon has designed the world's safest quick hitch with triple safety features: hydraulic monitoring, mechanical locking, electronic monitoring. Consequently the risk of faulty engagement is reduced to a minimum.

At the centre of the product programme are our world-leading tiltrotators. We have created a complete tool program around the tiltrotators – System engcon.

During 2013 the third model of tiltrotator was introduced: the Generation 2: The EC209 is adapted to 6–9 ton excavators. As its predecessors the EC209 is robust, easy to service and has an increased tilt angle. Additionally the 2-series is optimally adapted for use with the EC-Oil, engcon's new fully-hydraulic solution for the fast and safe change of tools and attachments without the driver needing to leave the cab.





NEW
EC209
EC219
EC226

NEW
GR20B
GR20RR

NEW
Q-Safe™.
New generation of
EC-Oil. Top brackets
S45, S60 and S70.

NEW
High-flow swivel

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System engcon turns your excavator into a profitable machine

Increasingly more excavator owners know that profitability has a name: System engcon. Using our complete tool system your excavator will be as multi-purpose as can be – enabling you to take on more and varied jobs.

Using the tiltrotator as a starting point, engcon has developed a number of tools with high requirements of function and quality, which make work easier, more efficient and with an improved profit margin. System engcon offers a total solution enabling you and your machine to tackle any challenge.

ASP – your safe partner!

engcon's constantly growing network of authorised service partners, ASP, give you the customer even better service. engcon Academy enables us to give our retailers and ASPs in-depth knowledge of our products.

When you contact one of our ASPs you can rely on their solid competence, the right tools and our recommended range of spare parts in store. This means that you as a customer can depend on faster and more efficient service.



engcon Quality Certification
SS-EN ISO 9001:2008



engcon Environmental Certification
SS-EN ISO 14001:2004





EC-Oil – on the way to being a necessity

The tiltrotator has already become invaluable – EC-Oil is fast becoming both invaluable and a customer requirement.

“It’s not unusual for clients to ask specifically for a machine with EC-Oil, so they know that the job will proceed quickly and smoothly”, says Hans Nilsson, Works Manager at Bröderna Engströms Entreprenadmaskiner in Örebro.

Engströms was founded in 1956 and is today run by the second generation of the Engström family, the brothers Jan-Olow and Per-Eric. The 100-employee strong company carries out civil engineering works over much of Sweden, and has around 130 units, of which about half are caterpillar and wheel loaders of various sizes.

“Just about every excavator from 5 to 25 tons is fitted with tiltrotators from engcon. The machine operators can’t work efficiently without the tiltrotator”, explains Hans Nilsson, Works Manager at Engströms.

Test-driving

The collaboration with engcon has deepened over the years, and has among other matters resulted in Engströms test-driving engcon’s products before they are mass-produced. Engströms have for example test-driven grabs from engcon and more recently the EC-Oil. Hans Nilsson sees being involved at an early stage as an advantage.

“Partly as we gain an extra modern tool that we can use in the business. And we also get the opportunity through feedback to influence tool development, so the result becomes as good as it can get”.

He sees the EC-Oil as a “must-have” tool in the near future - if it isn’t already.

“On service machines such as our wheeled excavators that use a lot of tools, the EC-Oil is superb.” A lot of time and money can be saved – by being able to quickly change attachments and tools without the driver needing to leave the cab.

“It’s not unusual for clients to ask specifically for a machine with EC-Oil, so they know that the job will proceed quickly and smoothly”.

Saves time


Martin Hagström has been operating his excavator for nearly ten years, the last two for Engströms.

All this time he’s been driving a 2010-model Liebherr 314 with the engcon system, a tiltrotator EC15 and EC-Oil.

“The tiltrotator is an obvious choice for me and I’d feel it would be difficult to work without the EC-Oil. Previously, when hydraulic tools had to be exchanged, the machine had to be depressurised, then run out and manually connect the hydraulic hoses and then restart the machine again. Every change of hydraulic tool easily took five minutes, but with the EC-Oil it can be done in seconds.”

Some days Martin can make up to 50 tool changes, and the engcon hydraulic grab is frequently used.

“It goes without saying that it wouldn’t have worked without the EC-Oil. “It enables me to save a lot of time”.



"A lot of time and money can be saved – by being able to quickly change attachments and tools without the driver needing to leave the cab"

Features EC-Oil™

- Quick and easy replacement of hydraulic tools and attachments without having to leave the driver's seat
- Robust and easy-to-use hydraulic connectors give a superior total cost of ownership
- Electrical connections allow flexible usage with the tiltrotator and attachments
- Tools can be connected with the system at full pressure
- Destructive testing of the hydraulic connectors functioning up to four times the working pressure
- Dirt resistant, tested over 1000 times in a filthy environment
- No costly reconstruction necessary of, for example, dump valves and return hoses on excavators
- Can be combined with high flow swivel (for QSECO60 and QSECO70)
- Internal connections, protected against impact and dirt ingress
- Play-free connection
- Welded high-tensile steel
- Price – the market's most affordable system for automatic oil and electrical connection.

EC-Oil™

Change task in an instant

Finally – fully hydraulic hitches available to everyone. Fully hydraulic hitches have been around for several years but due to their prohibitive price they have only been usable in specific tasks.

With EC-Oil™ this is all changed.

The new upgraded EC-Oil™ is engcon's system for hydraulic and electrical connection of hydraulic tools and attachments, Q-Safe™ specially adapted for our series of tiltrotators. As the sole supplier we can help you with a total solution – from control systems, hitches and tools, to support and safety analyses.

Use EC-Oil for instant tool and attachment changes directly from the cab. Using EC-Oil on the tool hitch, above and below the tiltrotator and on the tool itself you can, if necessary, under maximum breakout force disconnect from the tiltrotator and connect the quick hitch directly to a hydraulic or mechanical tool or attachment. This also saves weight, which means fuel savings and a better total economy. Together they create a system of tools that make your work proceed quickly, efficiently and profitably.

The EC-Oil is designed for maximum operational safety in demanding environments. The EC-Oil has no visible hoses or electrical cables that move around when connecting. This reduces the risk of



pinch damage and wear and tear. It is the market's only fully hydraulic hitch system that can tackle connecting pressurised tools and attachments at full system pressure. The proprietary oil and electrical connections are designed to be even more resistant to the often tough working conditions for excavators. The connectors are the most durable on the market - proven through destructive testing at 400 bar operating pressure and innumerable tests in contaminated environments.

The new EC-Oil can be fitted to engcon's new generation of tiltrotators, the new safe quick hitch connector Q-Safe™ and on all hydraulic tools and attachments from 2014.

NEW**Choose how you want to attach your tool**

Hydraulic tools



Mechanical tools





- ▶ EC02 & EC05, regardless of control system are fitted with load bearing valves on the tilt cylinder. This is because they only have one tilt cylinder and in the event of, for example, a hose breach no other cylinder remains to function as a "brake".
- ▶ Other models: Other models: EC209, EC10B, EC15B, EC219, EC226, EC30 are standard-fitted with load-bearing valves (2 per cylinder) on models with the SS9 (4-hose) system and other models are prepared for fitting load-bearing valves.
- ▶ All tiltrotators are fitted with tight hose protection that prevents oil from spraying out, for example in the event of a hose breach.
- ▶ All model RF, S30, S40, S45, S50, S60, S70 & S80 quick hitches have double-safety features in that there is a hose breach valve and springs that activates the locking wedges in the event of a hose breach or other situation causing the system to depressurise.
- ▶ All tiltrotators will be successively delivered with Q-Safe™, with or without EC-Oil, from 2014.

New 2-series tiltrotators

engcon's tiltrotators can be adapted to most of the excavator models and backhoes on the market, with machine weights of 1.5–32 tons.

The new generation of tiltrotators in the 2-series have started to roll-out. The first one out was the EC226, which is gradually replacing the EC20B workhorse, and was followed by the EC219 which is adaptable for excavators in the 12–19 ton weight class, and the latest EC209 for the 6–9 ton weight class.

The 2-series tiltrotators are robust, easy to service and have an increased tilt angle. They feature a hydraulic motor on the left-hand side, well-shielded and visible to the operator, and are also fully prepared for central lubrication and high-flow swivel and naturally EC-Oil hitches.

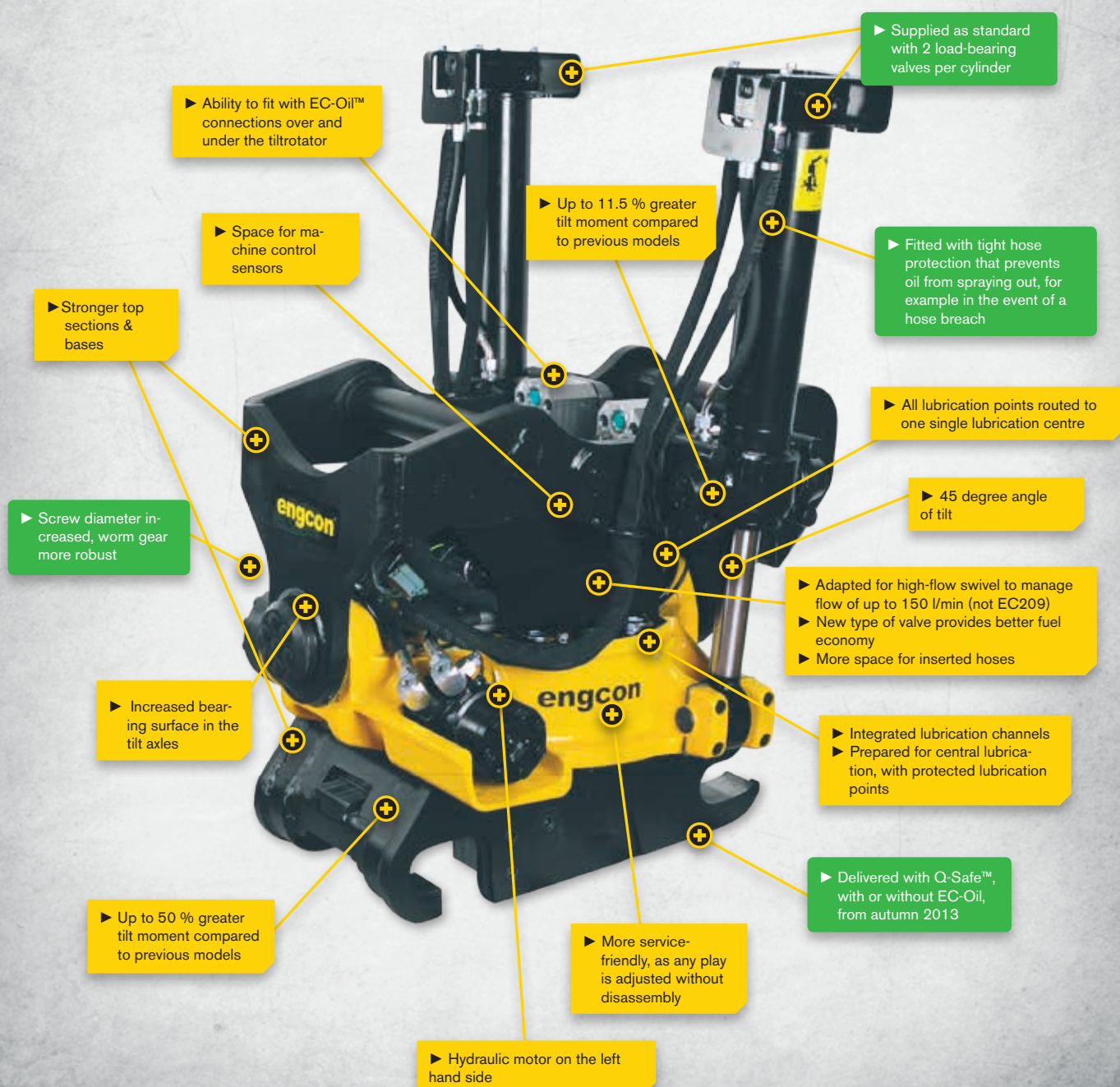


NEW

Gen II

With Generation 2 engcon strengthens its position as world-leading tiltrotator manufacturer. Among the features are a 45 degree tilt angle, increased service access, increased bushing sizes, hydraulic motor on the left-hand side and integrated central lubrication. The latter, that all lubrication points are connected one single lubrication block, saves the contractor a lot of time and money.

The EC209, adapted for the 6–9 ton volume segment of excavators, is the third model in Generation 2. A pre-production series of new EC209 is to be sold in autumn (fall) 2013.



Tiltrotators

EC02B: Adaptable for all excavators in the 1.5–3.5 ton weight class

Tiltrotators: Are supplied with hose, quick couplings and electrical installation kit for one machine. The hitch can be adapted to fit all machines on the market.

- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC02B can benefit from being fitted with engcon's Microprop proportional control system, giving stepless control and maximum precision.

Electrical system: Standard 12-volt.

EC02B



EC05B: Adaptable for all excavators in weight class 3–7 tons

Tiltrotators: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC05B can benefit from being fitted with engcon's Microprop proportional control system, giving stepless control and maximum precision.

Electrical system: Standard 12-volt.

Extra functions: Integrated grab (page 18–19)

EC05B



EC209: Adaptable for all excavators in the 6–9 ton weight class

NEW

The tiltrotator: Comes supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 45^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. Equipping your EC209 with engcon's Microprop proportional control system can be a real advantage, as it gives you stepless control and maximum precision.

Electrical system: Can be adapted to 12 V or 24 V electrical systems.

Extra functions:

- Integrated grab (page 18–19)
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC209



**EC-Oil™
READY**



- ▶ Integrated lubrication channels, all lubrication points connected to one single lubrication centre
- ▶ Stronger top and bottom sections
- ▶ 45° tilt angle
- ▶ Hydraulic motor on the left hand side
- ▶ Tilt cylinders prepared for load bearing valves (standard, on models with SS9)
- ▶ Grab cylinders* on models with grabs* and SS9 are fitted with a dump valve to avoid temporary loss of pressure when changing direction
- ▶ Robust breakout force and tilt moment
- ▶ Tilt axes with greater bearing surface
- ▶ New type of valve for better fuel economy
- ▶ Adapted to engcon's Microprop MC2 proportional control system for stepless control with the highest degree of precision.

* Extra equipment

EC10B: Adaptable for all excavators in the 6–14 ton weight class

Tiltrotators: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC10B can benefit from being fitted with engcon's Microprop proportional control system, giving stepless control and maximum precision.

Electrical system: Can be adapted to 12 V or 24 V electrical systems.

Extra functions:

- Integrated grab (page 18–19)
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC10B



The following upgrades are valid for the B-version, compared to the A-version:

- ▶ Larger ball-and-socket joints for tilt cylinders
- ▶ Larger contact surface for cylinder axles (heavyweight ears on frame)
- ▶ New locking for tilt and cylinder axles
- ▶ Support for worm screw
- ▶ New locking of axial bearings
- ▶ Improved bolt quality for centre ring
- ▶ Reinforced frame with "flange" around the lower section of the housing

EC15B: Adaptable for all excavators in the 12–18 ton weight class

Tiltrotators: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC15B can benefit from being fitted with engcon's Microprop proportional control system, giving stepless control and maximum precision.

Electrical system: Can be adapted for 12 V or 24 V electrical systems.

Extra functions:

- Integrated grab (page 18–19)
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC15B



**EC-Oil™
READY**



EC219: Adaptable for all excavators in the 14–19 ton weight class

Tiltrotator: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 45^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. Equipping your EC219 with engcon's Microprop proportional control system can be a real advantage, as it gives you stepless control and maximum precision.

Electrical system: Can be adapted to 12 V or 24 V electrical systems.

Extra functions:

- Integrated grab (page 18–19)
- High-flow swivel for flows up to 150 l/min at extra attachment points.
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC219



**EC-Oil™
READY**



- Prepared for central lubrication, with protected lube points
- Integrated lubrication channels
- All lube points routed to one single lubrication centre
- Heavy-duty upper & lower sections
- 45° tilt angle
- Hydraulic motor on left side
- 37% higher breakout force (compare with EC15B)
- 6.1% higher tilt torque (compare with EC15B)
- 27% higher torque (Compare with EC15B)
- Tilt axles increased bearing surface. Diameter 85mm
- More service-friendly: lateral play adjustable without disassembly
- Better space for incoming hoses
- Adapted for high-flow swivel with flow rates up to 150l/min
- New type of valves for better fuel economy
- Tilt cylinders ready for load-bearing valves (important when operating with pallet forks)

EC226: Adaptable for all excavators in the 18–26 ton weight class

Tiltrotators: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 45^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. Equipping your EC226 with engcon's Microprop proportional control system can be a real advantage, giving you stepless control and maximum precision.

Electrical system: Standard 24-volt electrical system.

Extra functions:

- Integrated grab (page 18–19)
- High-flow swivel for flows up to 150 l/min at extra attachment points.
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC226



**EC-Oil™
READY**



- ▶ Prepared for central lubrication, with protected lube points
- ▶ Integrated lubrication channels
- ▶ All lube points routed to one single lubrication centre
- ▶ Heavy-duty upper & lower sections
- ▶ Space for machine control sensors
- ▶ 45° tilt angle
- ▶ Hydraulic motor on left side
- ▶ 50% higher breakout force (Compare with EC20B)
- ▶ 11.5% higher tilt torque (Compare with EC20B)
- ▶ Screw diameter increased, worm gear more robust
- ▶ Tilt axles increased bearing surface. Diameter 100mm
- ▶ More service-friendly: lateral play adjustable without disassembly
- ▶ Better space for incoming hoses
- ▶ Adapted for high-flow swivel with flow rates up to 150 l/min
- ▶ New type of valves for better fuel economy
- ▶ Tilt cylinders ready for load-bearing valves (important when operating with pallet forks)

EC30: Adaptable for all excavators in the 22–32 ton weight class

Tiltrotator: Are supplied with hose, quick couplings and electrical installation kit for one machine. Top brackets can be adapted to most machines.

- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards
- Extra outlet with high-flow as standard, or double extra outlets (does not apply to models with grab)

Quick hitch: We offer most of the quick hitches available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. Equipping your EC30 with engcon's Microprop proportional control system can be a real advantage, as it gives you stepless control and maximum precision.

Electrical system: Can be adapted to 12 V or 24 V electrical systems.

Extra functions:

- Integrated grab (page 18–19)
- High-flow swivel for flows up to 150 l/min at extra attachment points.
- Can be fitted with load bearing valves, which among other things are a requirement for driving with operating pallet forks (standard requirement for all models with control system)

EC30



**EC-Oil™
READY**





- ▶ All tilt hitches, regardless of control system, are prepared for tilt cylinder load bearing valves.
- ▶ All tiltrotators are fitted with tight hose protection that prevents oil from spraying out, for example in the event of a hose breach.
- ▶ All tool hitches on rotators and tilt hitches have double safety features in that there is a hose breach valve and springs that activate the locking wedges in the event of a hose breach or other situation causing the system to depressurise.
- ▶ All rotators and tilt hitches will be successively delivered with Q-Safe tool hitches, with or without EC-Oil, from autumn 2013.

Rotate as you want to – tilt up to 40°

If the tilt function is not needed, a rotator goes a long way. engcon's rotators fit all excavators and backhoes, and offer unhindered rotation. The rotator is supplied with hose, quick couplings and electrical installation equipment. You choose the control system to suit your needs and the scope of the machine.

The tilt attachment gives machines not requiring a rotator function the ability to tilt all kinds of bucket and tools by plus/minus 40 degrees. A powerful and cost-efficient alternative, adaptable to all types of excavator.

Rotators

EC05B-R, EC10B-R, EC15B-R, EC219-R, EC226-R, EC30B-R: Adaptable for all excavators and backhoes in the 3–32 ton weight class

When only rotation is needed, with no tilt function.

The rotator: Supplied with hoses, quick couplings and electrical installation. Can be used on all excavators and backhoes.

Quick hitch: We offer most of the quick hitches available on the market

Control systems: Choose between several different control systems based on your machine's characteristics. Equipping the EC05B-R - EC30-R with engcon's Micro-prop proportional control system can be a real advantage, as it gives you stepless control and maximum precision.

Electrical system: Can be adapted to 12 V or 24 V electrical systems

Extra functions: Integrated grab (page 18–19)

EC05B-R | EC10B-R | EC15B-R | EC219-R | EC226-R | EC30B-R



EC-Oil™
READY



Technical specifications: page 39

Tilt hitches

TFS30–TFS80, TFS1–TFS2: Adaptable for all excavators in the 1–32 ton weight class

For when only tilt function is needed, with no rotation.

- Gives all buckets and tools $\pm 40^\circ$ tilt motion
- Powerful and cost-efficient
- TFS30 and TFS40 have one cylinder; others have two
- TFS1–TFS2 fits to Volvo's quick-hitch system S1 (20), S2 (27)
- Complies with European safety standards
- High grade steel for strength and low weight

TFS30 | TFS40 | TFS45/50 | TFS60 | TFS70 | TFS80
TFS1 | TFS2/27



EC-Oil™
READY



Technical specifications: page 39

Grab the situation safely

Sometimes you need a helping hand at work. engcon's integrated grabs in high-tensile strength steel give you the perfect workmate for heavy objects, such as posts, manhole covers and curbstones. Check valves in each grab cylinder increase your workplace safety.

A new grab for railway – GR20RR (Grab 20 Rail Road) is a powerful and removable integrated grab. This has been specially developed for tough environments synonymous with railway works, with heavy rail sections to be pulled and lifted by excavators.



All tiltrotators with the SS9 control system (4-hose) that have an integrated grab have a so-called 'dump valve' that prevents any possible pressure surge when changing direction and thereby preventing the risk of unwanted opening of the grab.

Integrated grabs

GR05–GR30: Integrated grab for tiltrotators and rotators 3–32 tons

- The grab arms are made from high-tensile steel for strength and low weight
- Safe lifting with check valves in each grab cylinder
- The perfect workmate on the site
- Versatile handling of posts and curbstones, and other objects
- Practical for pipe laying and manhole positioning
- Available for tiltrotator/rotator EC05B, EC10B, EC15B, EC219, EC226 and EC30
- 3 finger claws as standard
- Complies with European safety standards

Advantages GR20B:

- ▶ Increased grab reach – up to 820 mm
- ▶ Heavy-duty grab protection
- ▶ Fixed and replaceable torque reaction bars
- ▶ Improved axle locking
- ▶ Fixed installation – highest safety, always there

Advantages GR30 (S80 and S3):

- ▶ Grab reach up to 1080 mm

GR05 | GR10 | GR20B | GR30



GR20RR: Integrated grab for EC15B and EC219*

The new GR20RR integrated grab is specially developed for the tough environments that grabs are exposed to on the railway, where a grab will often be used to pull and lift heavy rails with excavators.

Advantages:

- Robust construction designed for heavy and difficult usage, such as in the railway industry.
- Angled down up to 42 degrees
- Large reach – 820 mm
- Protected cylinders

* Standard attachment combinations: S45, S50, S60 and SMP2
Not possible: S1 and S2
Other attachment combinations on request.

GR20RR



Q-Safe™

– the world's safest quick hitch lock

Q-Safe™ is engcon's newly-developed threefold safety quick hitch for excavators. Q-Safe is part of engcon's new drive and concept "Non Accident Generation" in which safety awareness hallmarks the whole product range.

engcon's Q-Safe is the safest quick hitch on the market, reducing the risk of incorrect tool connection to a minimum. With Q-Safe fitted to an excavator, the bucket or other attachment must have a certain degree of ground contact to allow connection or removal. That is to say attachments cannot be removed or attached whilst in the air.

For as long as the quick hitch is not fully locked the excavator can only function at a significantly reduced speed, with full power only being resumed after the attachment has been correctly been connected and locked.

Locking takes place automatically by the attachment first being manoeuvred into a fixed, wedge-shaped position, with the simultaneous connection being made through a steel lip, which fully prevents the attachment from dropping or running the risk of swinging.

In addition to the mechanical locking system and the safety lip, the attachment is monitored by two independent sensors that react on contact with both bucket axes.

The Q-Safe threefold safety system is thus achieved via: Hydraulic monitoring, mechanical locking, electronic monitoring.

With Q-Safe the driver cannot get into a situation where things go wrong – it is a preventative system, contributing to a safer workplace.

► The hook is safety classed in compliance with EN ISO 12100-1/ A1:2009 and EN ISO 12100-2/ A1:2009

► Prepared for connection with external audible or visible warning systems.

► Double electronic sensors ensure contact with forward and rear axes.

► Front and rear axle locks eliminate the risk of accidents with swinging tools or attachments.

► The locking lip's unique design prevents the rear axle from coming loose.

Footnote: Production of Q-Safe starts in autumn 2013 and will successively be introduced as engcon's standard hitch.

NEW



Q-Safe™

- ▶ Threefold safety with built-in functions which via the excavator's hydraulic system prevent incorrect handling.
- ▶ The tool or attachment must be in contact with the ground to be able to activate the tool or attachment lock.
- ▶ Compared to only front axle locking, accidents with swinging tools or attachments are eliminated.
- ▶ None of engcon's buckets are designed with 'hooks' making it possible to 'cheat' when moving tools and attachments, for example by hooking a bucket tooth onto it. This implies an obvious risk for the bucket to slide off the hook of the bucket carrying the other buckets.
- ▶ The lifting hook is safety classed in compliance with EN ISO 12100-1/A1:2009 and EN ISO 12100-2/A1:2009
- ▶ Prepared for connection with external audible or visible warning systems.

Change your task in an instant

engcon offers the market's widest programme of quick hitch connectors. The choice is yours - choose between everything from a mechanical attachment up to our latest Q-Safe™ and EC-Oil™ quick hitch system that automatically connects electrics and hydraulics.

Q-Safe™ – the world's safest quick hitch lock

QS45–QS70/QS45-ECO–QS70-ECO:

For all excavators in the 6–25 ton weight class

Features Q-Safe™

- Triple safety system:
 1. Hydraulic safety system works through sensing the tool or attachment is in ground contact to be able to operate the quick hitch lock.
 2. Double mechanical locks preventing the tool or attachment coming loose from the quick hitch even if some part of the locking system should fail.
 3. Sensors in the quick hitch activate an alert by having an effect on the machine's hydraulic system* and also warns by audible and visible alarms if the lock is open, failure indication or incorrect operation.
- Q-Safe QS45, QS60 and QS70 are factory-prepared for EC-Oil™ and its functions with automatic electrical and hydraulic connections.
- Safe, robust and dependable
- Approved and classified lifting hook
- Play-free design with double contact surfaces compared to other hitches
- Longer "shark jaws" for easier and safer picking up of tools
- Welded high-tensile steel
- Shallow installation dimensions
- Low weight
- Simplicity – Easy-to-use

QS45 | QS60 | QS70

QS45-ECO | QS60-ECO | QS70-ECO



EC-Oil™
READY



Production of Q-Safe starts in 2014 and will successively be phased-in as engcon's standard hitch.

At the end of 2014 the so-called EC-Oil hitch starting with the S60 will be converted to Q-Safe, and the Q-Safe quick hitch can be selected with or without EC-Oil.

* Initially Q-Safe will be fitted with a system consisting of warning signals in the event of incorrect connection of the tools, and will subsequently on a continual basis and in conjunction with the machine suppliers be equipped with built-in effect reduction.



Quick hitch connectors

S30–S80, S1–S3: For all excavators in the 1–32 ton weight class

- Can be supplied with hydraulic or mechanical locking
- Hydraulic locking for speedy attachment and tool changes straight from the cab
- Play-free connection
- Changeable between deep and shallow digging (S30–S80)
- Robust, dependable and cost-efficient
- Shallow installation dimensions.
- Low weight
- Welded high-tensile steel
- Type-approved lifting hook (not S30 and S40)

S30–S80 | S1–S3



Top brackets EC-Oil™

GS45-ECO, GS60-ECO and GS70-ECO for all excavators in the 6–30 ton weight class

- Top/attachment bracket adapted to EC-Oil connectors
- Easy to modify buckets for engcon quick hitches
- Robust, dependable and cost-efficient
- Welded in high tensile steel

GS45-ECO–GS70-ECO

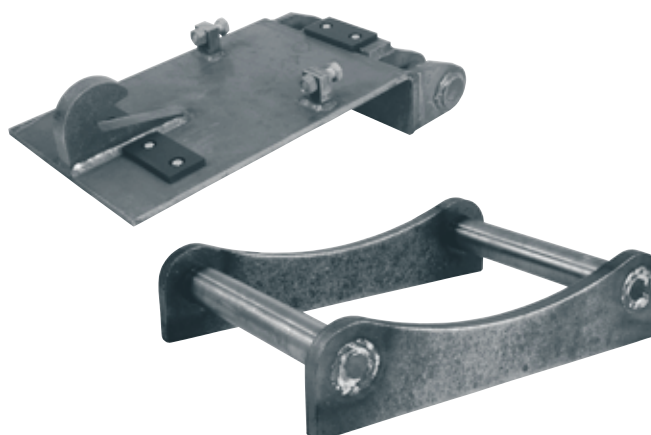


Top brackets

GS30–GS80, GS1–GS3: For all excavators in the 1–32 ton weight class

- Easy to modify buckets for engcon quick hitches
- Robust, dependable and cost-efficient
- Welded high-tensile steel

GS30–GS80 | GS1–GS3



Refined tools

engcon offers a broad range of hydraulic tools for your excavator. The tools are designed for maximum durability and are specially adapted to function together with engcon's tiltrotators and quick hitch connectors. Naturally the tools can be fitted with EC-Oil™ for fast tool changes directly from the cab.



Sorting & handling grab

- ▶ Load valve and pressure accumulator retain the grab power for a long time and ensure safe lifting (SK).
- ▶ Meets European safety standards prevents incorrect handling.

Ground vibrators/compactor plates

- ▶ Meets European safety standards.

Sorting and handling grab

SK05, SK10, SK15, SK20, SK30: For all excavators in the 3–32 ton weight class

- Cutting edge in heavy-duty steel
- All engcon's SK-grabs can be fitted with removable teeth
- Load valve and pressure accumulator retain the grab power for a long time and ensure safe lifting (SK)
- Complies with European safety standards
- Expander bushings in larger joints
- Swedish design for excellent geometry and problem-free operation

SK05 | SK10 | SK15 | SK20 | SK30



**EC-Oil™
READY**



SK15 with EC-Oil connection



SK20 with teeth



SK20 with rotator



Timber grabs

TG16S–TG55S: For all excavators

engcon's timber grabs are, together with the tiltrotator, the ultimate tool for round timber handling and light sorting tasks. The grabs are reinforced with Hardox for a longer service life and can be used with a large variety of attachments and tools.

TG16S–TG55S

EC-Oil™
READY



Technical specifications: page 41

Pallet forks

GH1000–GHH1200: Forklift frame for excavators

engcon's pallet forks/forklift frames –

A robust and cleverly engineered design for best visibility. Tempered forks guarantee a long service life.

NB! Always consult the applicable safety instructions for using the pallet fork on each individual machine. When using the pallet fork together with a tiltrotator, a check valve must be fitted to the tiltrotator.

The tilt cylinders on engcon's generation 2 tiltrotators are factory-prepared for check valves and are consequently simple to retro-fit.

* GH = mechanical spreading,
GHH = hydraulic spreading

GH1000 | GHH1200

EC-Oil™
READY



Technical specifications: page 41

Ground vibrators/compactor plates

PP350, PP600, PP950: For all excavators in the 6–32 ton weight class

- Packing disc in hard-wearing steel
- Side plating for levelling-off filler material
- Open short ends for easy emptying of the topside plating
- Joined together with rubber elements positioned for effective insulation of the vibrators combined with adequate stiffness for grading
- The vibrator unit and hydraulic parts are well-protected inside the side plates
- Can be fitted with optional mounting
- Complete with flow valve
- Complies with European safety standards
- Supplied as standard excluding mounting and machine hoses
- Tandem-connected weights

PP350 | PP600 | PP950



EC-Oil™
READY



Best in test

engcon's ground vibrator PP600 proved the best result in an impartial test conducted by geologist Dr. H. Seeliger in Kassel, Germany. The degree of consolidation was remarkable with 103.2 % over two transfers and 101.6 % over six transfers.

PP3200 For all excavators in the 3–16 ton weight class

- Low flow requirement (35 litres) allows the PP3200 to be run directly off the extra connections on the tiltrotator
- Perfect combination to use with EC-Oil
- Variable working width
- Specially adapted pack cushions
- Packing disc in hard-wearing steel
- Side plating for levelling-off filler material
- Open short ends for easy emptying of the topside plating
- Joined together with rubber elements positioned for effective insulation of the vibrators combined with adequate stiffness for grading
- The vibrator unit and hydraulic parts are well-protected inside the side plates
- Can be fitted with optional mounting
- Complies with European safety standards
- Supplied as standard excluding mounting and machine hoses

PP3200



EC-Oil™
READY



Accessories: Widening plates, trenching blade, specially adapted pack cushions for, for example, packing in sheet-pilings.

Rotating brushes

SR800–SR2000: Rotating brushes for excavators

engcon's rotating brushes – make the most of what the excavator has to offer and open previously unthought of possibilities in a wide range of speciality areas. Regardless of whether you're sweeping sand, gravel or dirt, this will very quickly become a favourite tool that you just won't be able to function without.

In the wintertime you'll find areas such as road crossings, pedestrian walkways, railtrack points, cabin and container roofs, balcony roofs and more, where snow normally has to be cleared manually. In the summer the brush is used for collecting road sand and gravel, brushing grassed areas, foundations, rocks and more. The only limit is your imagination.

A hydraulic motor provides the power, and has a chain drive which enables the brush rotation speed to be adjusted. The open design allows unsurpassed service-friendly access, and the standard polypropylene brushes can be replaced quickly and easily.

SR800 | SR1300 | SR1600 | SR1800 | SR2000

EC-Oil™
READY





Tools to take on the toughest of tasks

engcon offers a wide range of tools and attachments, adapted to your specific needs. The tools and attachments are manufactured in high-quality steel and are designed to provide the greatest flexibility and crack resistance. The wear and cutting steel has a hardness of around 500 brinell. We also reinforce our tools with Hardox on the most exposed positions to manage an extra tough load.



Buckets

- None of engcon's buckets are designed with 'hooks' making it possible to 'cheat' when moving tools and attachments, for example by hooking a bucket tooth onto it. This implies an obvious risk for the bucket to slide off the hook of the bucket carrying the other buckets.

Deep-digging bucket

DB1–DB29: For all excavators in the 1.5–28 ton weight class

engcon deep-digging bucket –

Robust construction for tough jobs. A favourite for anyone needing to excavate and dig in difficult conditions where fast penetration and easy filling are prioritised, for example in trenching and other mass transfers requiring capacity. Available with or without teeth.

Tooth kit available as an optional extra and supplied ready-fitted.

DB1–DB29



Technical specifications: page 42

Water/Drainage bucket

TB09–TB16: For all excavators in the 10–18 ton weight class

engcon's water & sewerage bucket

– specially designed for excavating water and sewerage channels, and other service tasks calling for a deep-digging bucket with a somewhat lower design, and where a cutting edge without teeth is required. The water & sewerage bucket is, as for the other buckets in engcon's range, reinforced with Hardox on the most exposed positions.

TB09–TB16



Technical specifications: page 42

Cable bucket

CB2–CB25: For all excavators in the 1.5–25 ton weight class

engcon's cable bucket – For digging with a minimal width, for example, for cables or other media requiring narrow-gauge ditching. The long profile allows deep trenching without the tiltrotator having to come below surface level.

Toothing kit available as an optional extra and supplied ready-fitted.

CB2–CB25



Grading bucket

GB2–GB29: For all excavators in the 1.5–30 ton weight class

engcon's grading bucket – Optimised together with experienced contractors for use together with the tiltrotator. Chamfered corners from the bottom up to the ceiling to avoid “colliding” with house walls and other objects that can potentially be damaged by the rotating bucket. Conical form for easier filling and an adapted angle of 16 degrees between mounting and bottom to more easily rotate the bucket without losing the material being moved.

GB2–GB29



Features engcon grading bucket

- 1 Chamfered corners to avoid collision
- 2 Tiltrotator-adapted ceiling angle
- 3 Hardox-reinforcements on other wear surfaces
- 4 Conical form for easier filling and better release
- 5 Wear and cutting steel - 500 brinells hardness

Asphalt cutter

TC05–TC20: For all excavators in the 2–22 ton weight class

engcon's asphalt cutter – engcon's asphalt cutter allows you to make first-rate cuts and avoid expensive costs with asphalt dug up unnecessarily. Can also be used for first-rate cuts on grass surfaces and other locations where precision is called for.

TC05 | TC10 | TC15 | TC20



Technical specifications: page 43

Rippers

R5–R30: For all excavators in the 1–32 ton weight class

engcon's ripper – With engcon's ripper you'll find no problem in penetrating frozen and hard ground. The ripper, or "frost hook" as it is also known, is optimised for the best ripping ability and breakout force in hard material.

R5 | R10 | R15 | R20 | R30



Technical specifications: page 43

Optional extras

Control system



Microprop DC2 – the safest control system on the market

DC2 meets the new safety standard ISO 13849-1 which places high demands on all components in a control system, such as hydraulics, electronics and software. Together with engcon's tiltrotators and Q-Safe™ the DC2 creates a safer and more secure working environment. DC2 offers the option of track control and wheel steering and also moving the boom. A smart-phone app allows a remote control function as a complement to PC and USB cable connection.



The Microprop DC2 control system meets all current and known future safety requirements.



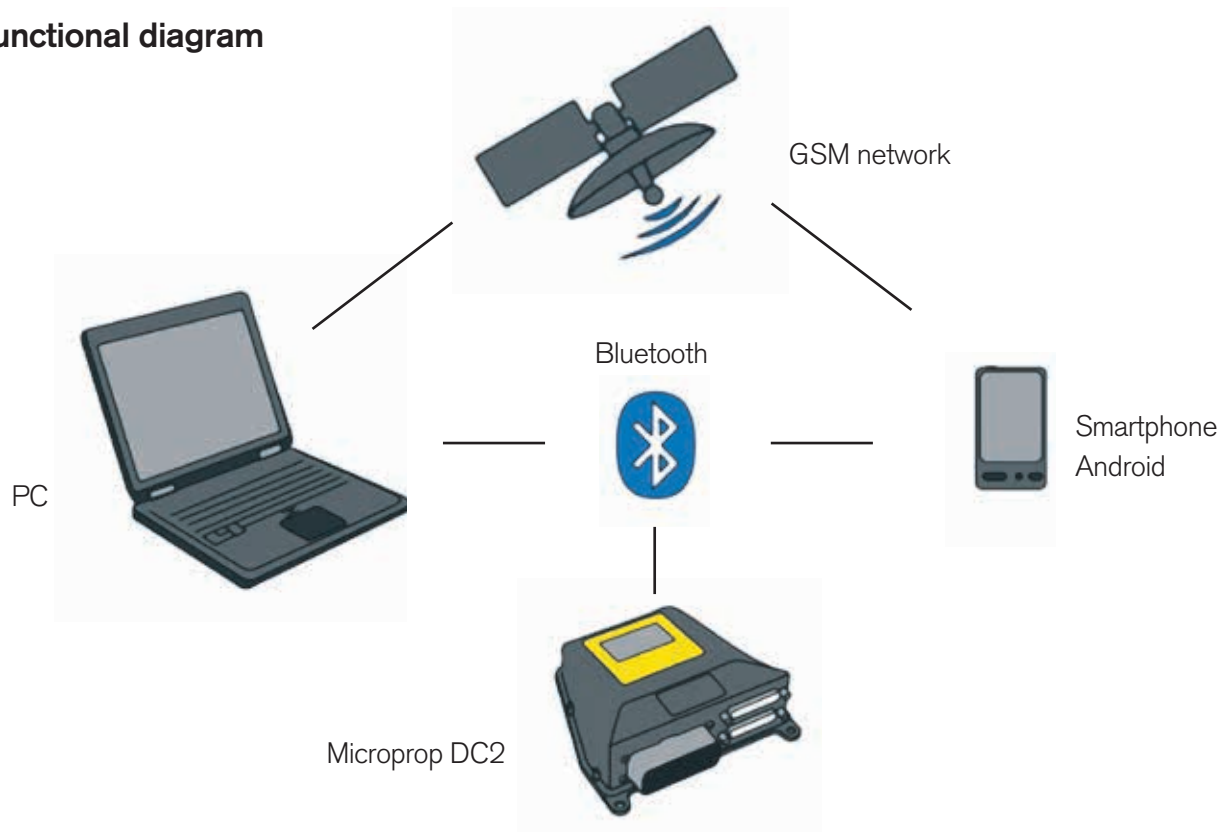
Microprop DC2

Advantages:

- Microprop DC2 complies with the new international machine safety standard SS-EN ISO 13849-1
- Fast assembly with all connections made using contact devices
- Easy to get started as Microprop DC2 is fitted with an automatic basic calibration function
- The MicroConf PC-programme allows you to make fine adjustments and can instantly follow the effect of changes made when the tiltrotator is in use
- The machine controls don't need to be adjusted if the extra controller is used
- The system makes a back-up of all the settings from the cab module to the aggregate module
- Display for alarm and for making certain settings
- Double feeder function
- Robust design increases operational safety
- Available as an extra or as a retro-fit
- Option of track control, wheel steering and boom control
- Settings control via Bluetooth and smartphone as an alternative to PC and USB cables
- Control with up to six rollers
- Suits most machines on the market
- Aggregate module located in the tiltrotator



Functional diagram



High-flow swivel

New high-flow swivel for demanding extra equipment

Excavators nowadays are more often using tools requiring a higher oil flow, which in turn put entirely different demands on the tiltrotators than previously. This has now been solved by engcon in the development of a high-flow swivel, guaranteeing 150 litres/min without any noticeable effect loss or heat generation.

The high-flow swivel can be used on the EC15B, EC219, EC226 and EC30 models. The development work has also included a new type of valve, which reduces fuel consumption and eliminates the generation of heat.

High-flow swivel



Specifications

Model	High-flow swivel
Flow, extra outlet: (l/min)	150

- ▶ Entirely new design of swivel giving full control over the hydraulic flow
- ▶ Use hydraulic flow implements directly via the tiltrotator, such as ground compactors or grass cutters, in situations where traditional methods would have difficulty
- ▶ Manages a very high flow whilst maintaining pressure level
- ▶ A free 3/4" return (free return required on the machine) and an oil leakage channel are available. SS5 & SS10 only.



Specifications

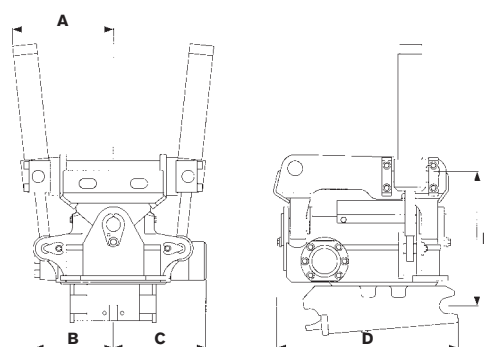
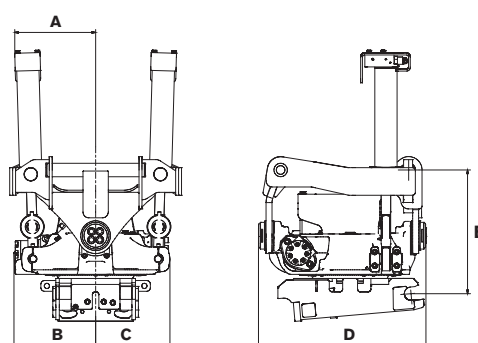
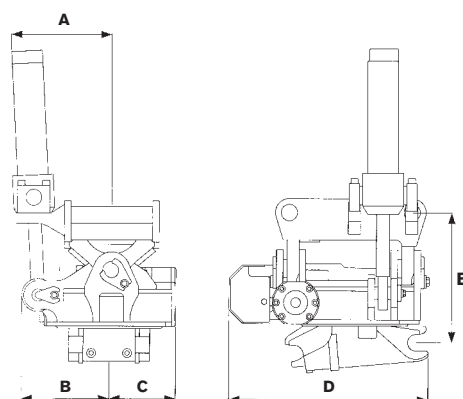
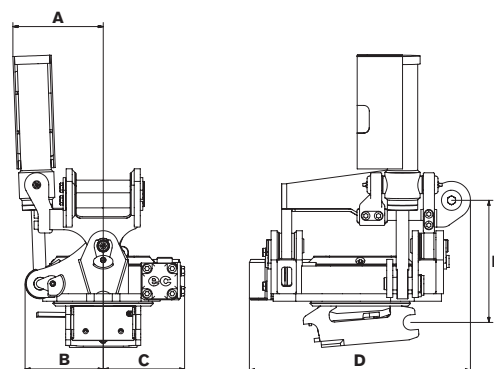
Tiltrotators

Model	EC02B
Width A: (mm)	180
Width B: (mm)	155
Width C: (mm)	160
Total length D: (mm)	435
Construction height E: (mm)	from 245
Weight: (kg)	from 65
Tilt range:	2x40°
Rec hydraulic flow SS5/SS10: (l/min)	25
Rec hydraulic flow SS9 tilt/rotation: (l/min)	7/20
Working pressure: (MPa)	18–21
Standard mountings:	S30, S40
Max. bucket width recommended by engcon: (mm)	900
Max. tensile stress: (kNm)	18
Base machine weight: (t)	1.5–3.5

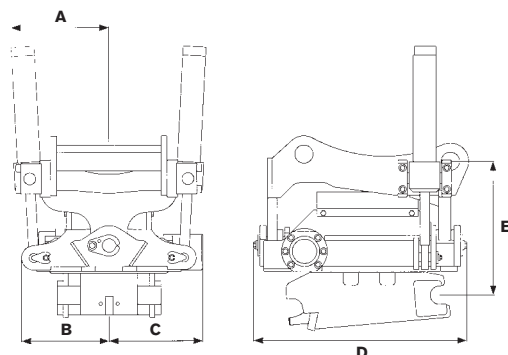
Model	EC05B
Width A: (mm)	263
Width B: (mm)	220
Width C: (mm)	212
Total length D: (mm)	493
Construction height E: (mm)	from 364
Weight: (kg)	from 155
Tilt range:	2x40°
Rec hydraulic flow SS5/SS10: (l/min)	40
Rec hydraulic flow SS9 tilt/rotation: (l/min)	15/30
Working pressure: (MPa)	22
Standard mountings:	S40, S45
Max. bucket width recommended by engcon: (mm)	1,200
Max. tensile stress: (kNm)	45
Base machine weight: (t)	3–7

Typ	EC209
Width A: (mm)	266
Width B: (mm)	250
Width C: (mm)	273
Total length D: (mm)	561
Construction height E: (mm)	from 425
Weight: (kg)	from 280
Tilt range:	2x45°
Rec hydraulic flow SS5/SS10: (l/min)	40
Rec hydraulic flow SS9 tilt/rotation: (l/min)	15/30
Working pressure: (MPa)	22
Standard mountings:	S45, S50
Max. bucket width recommended by engcon: (mm)	1 200
Max. tensile stress: (kNm)	74
Base machine weight: (t)	6–9

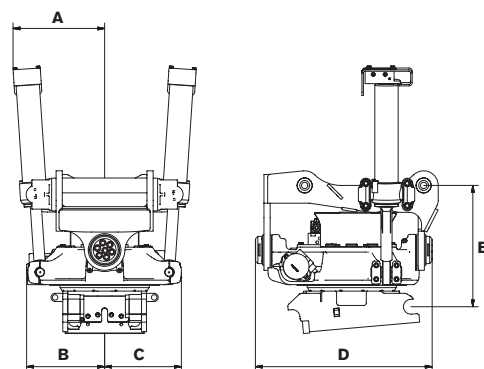
Model	EC10B
Width A: (mm)	320
Width B: (mm)	245
Width C: (mm)	290
Overall length D: (mm)	536
Construction height E: (mm)	from 440
Weight: (kg)	from 270
Tilt range:	2x40°
Rec hydraulic flow SS5/SS10: (l/min)	60
Rec hydraulic flow SS9 tilt/rotation: (l/min)	30/40
Working pressure: (MPa)	22
Standard mountings:	S45, S50
Max. bucket width recommended by engcon: (mm)	1,400
Max. tensile stress: (kNm)	90
Base machine weight: (t)	6–14



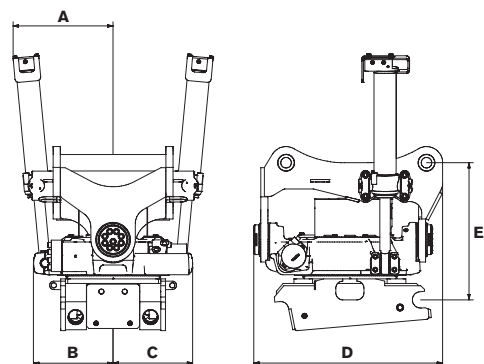
Model	EC15B
Width A: (mm)	320
Width B: (mm)	285
Width C: (mm)	307
Overall length D: (mm)	698
Construction height E: (mm)	from 440
Weight: (kg)	from 360
Tilt range:	2x40°
Rec hydraulic flow SS5/SS10: (l/min)	80
Rec hydraulic flow SS9 tilt/rotation: (l/min)	35/50
Working pressure: (MPa)	22
Standard mountings:	S60
Max. bucket width recommended by engcon: (mm)	1,600
Max. tensile stress: (kNm)	135
Base machine weight: (t)	12–18



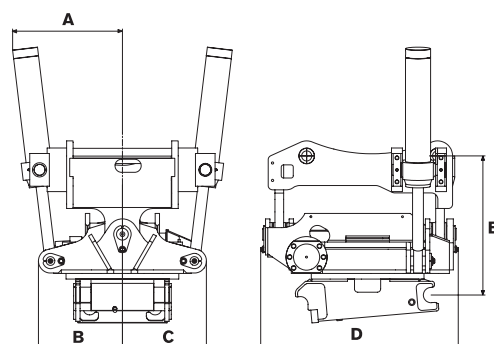
Model	EC219
Width A: (mm)	369
Width B: (mm)	315
Width C: (mm)	310
Overall length D: (mm)	737
Construction height E: (mm)	from 480
Weight: (kg)	from 420
Tilt range:	2x45°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	65/70
Working pressure: (MPa)	22
Standard mountings:	S60, S1
Max. bucket width recommended by engcon: (mm)	1,700
Max. tensile stress: (kNm)	186
Base machine weight: (t)	14–19



Model	EC226
Width A: (mm)	426
Width B: (mm)	340
Width C: (mm)	340
Overall length D: (mm)	760
Construction height E: (mm)	from 500
Weight: (kg)	from 590
Tilt range:	2x45°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	70/70
Working pressure: (MPa)	22
Standard mountings:	S60, S70, S1
Max. bucket width recommended by engcon: (mm)	2,000
Max. tensile stress: (kNm)	270
Base machine weight: (t)	18–26



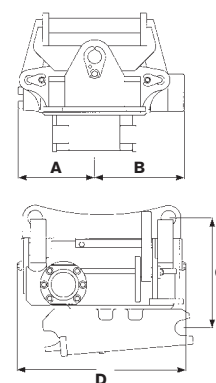
Model	EC30
Width A: (mm)	500
Width B: (mm)	390
Width C: (mm)	390
Overall length D: (mm)	970
Construction height E: (mm)	from 740
Weight: (kg)	from 850
Tilt range:	2x40°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	86/80
Working pressure: (MPa)	22
Standard mountings:	S70, S80, S2
Max. bucket width recommended by engcon: (mm)	2,200
Max. tensile stress: (kNm)	320
Base machine weight: (t)	22–32



engcon reserves the right to make changes to designs without prior notice

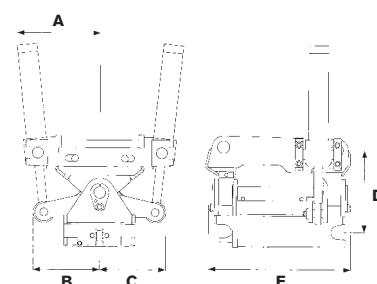
Rotators

Model	EC05B-R	EC10B-R	EC15B-R	EC219-R	EC226-R	EC30B-R
Width A: (mm)	210	240	285	396	426	390
Width B: (mm)	160	290	307	315	340	390
Construction height C: (mm) from	275	350	380	480	500	550
Length D: (mm)	485	560	700	373	760	900
Weight: (kg)	135	250	310	400	560	530
Flow requirement: (l/min)	15–40	20–40	40–60	120	120	40–80
Working pressure: (MPa)	18–21	18–21	18–21	18–22	18–22	18–21
Base machine weight: (t)	3–7	6–14	12–18	12–19	18–26	22–32

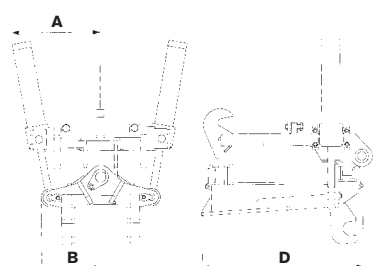


Tilt hitches

Model	TFS30	TFS40	TFS45/50	TFS60	TFS70	TFS80
Width A: (mm)	198	250	320	350	430	560
Width B: (mm)	156	220	250	265	385	415
Width C: (mm)	88	100	250	265	385	415
Construction height D: (mm)	215	220	310	340	580	630
Length E: (mm)	315	360	540	550	770	900
Weight: (kg)	30	40	125	160	240	330
Base machine weight: (t)	0–2	3–6	6–12	12–16	18–22	22–32



Model	TFS1	TFS2/27
Width A: (mm)	450	500
Width B: (mm)	300	335
Construction height C: (mm)	370	510
Length D: (mm)	830	875
Weight: (kg)	280	490
Base machine weight: (t)	18–24	24–32

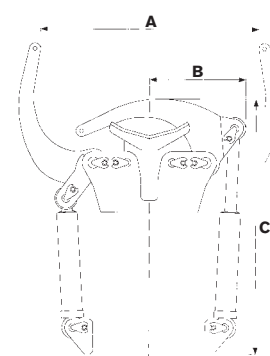


Integrated grabs

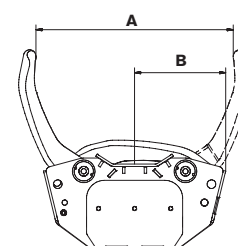
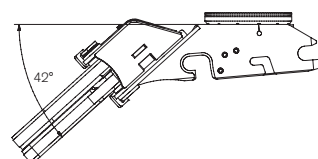
Model	GR05	GR10	GR20B	GR30**
Largest grip width A: (mm)	370	610	820–950*	1,080
Width B: (mm)	200	270	350	440
Length C: (mm)	585	760	910	980
Grip force: (kN)	19	14	23	16
Weight: (kg)	50	70	85	148
Max. hydraulic pressure: (MPa)	210	210	210	210
Clamping force at 175 bar: (kg)	1,378	1,248	1,864	1,586
Clamping force at 210 bar: (kg)	1,654	1,497	2,234	1,956

* Depending on top bracket.

** GR30 only fits S80- and S3-brackets



Model	GR20RR
Largest grip width A: (mm)	820
Width B: (mm)	380
Length C: (mm)	Depending on the top bracket
Weight: (kg)	140
Clamping force at 17.5 Mpa: (kg)	1540
Clamping force at 21 Mpa: (kg)	1840
Angled at 35–42° depending on the bracket	
Detachable	
Protected cylinders	

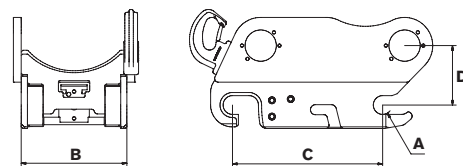


Q-Safe™

Model	ECO45	ECO60	ECO70**
Axle diameter A: (mm)	Ø45	Ø60	Ø70
Width B: (mm)	290	340	400
Length C: (mm)	430	480	600
Construction height D: (mm)*	185	190	220
Weight: (kg)*	100	180	180
Flow: (l/min)	55	100	100
Max pressure: (MPa)	21	21	21
Base machine weight: (t)	6–12	12–18	16–25

* Depending on machine bracket

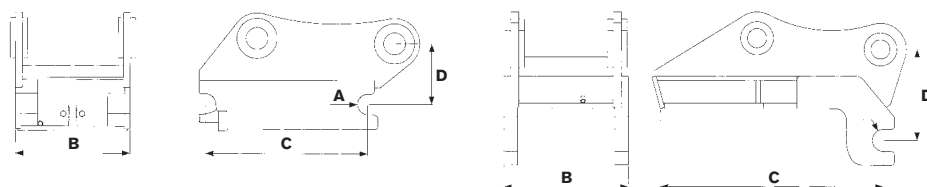
** Introduced during 2014



Quick hitches

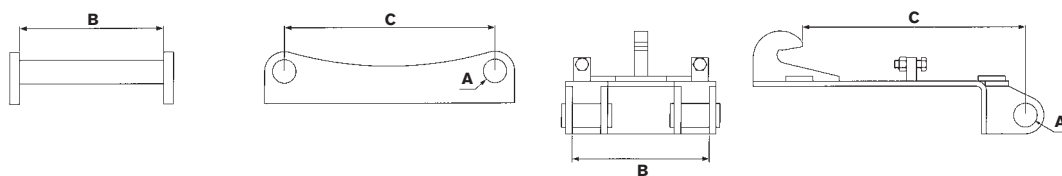
Model	S30/150	S30/180	S40/200	S40/240	S45	S50	S60	S70	S80	S1	S2/27	S3
Axle diameter A: (mm)	Ø30	Ø30	Ø40	Ø40	Ø45	Ø50	Ø60	Ø70	Ø80	Ø70	Ø80	Ø100
Width B: (mm)	150	180	200	240	290	270	340	450	590	400	450	620
Length C: (mm)	200	230	300	300	430	430	480	600	670	750	810	870
Construction height D: (mm)*	110	110	110	110	140	140	170	190	220	130	170	230
Weight: (kg)*	10	10	25	25	45	50	125	210	310	170	215	300
Max pressure: (MPa)	21	21	21	21	21	21	21	21	21	21	21	21
Base machine weight: (t)	1–3	1–3	2–6	2–6	6–12	6–12	12–18	16–25	25–35	18–24	22–32	25–40

* Depending on machine bracket



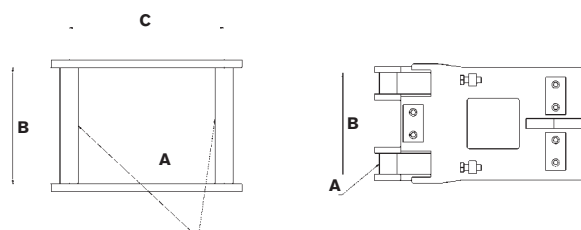
Top brackets

Model	GS30/150	GS30/180	GS40/200	GS40/240	GS45	GS50	GS60	GS70	GS80	GS1	GS2/27	GS3
Axle diameter A: (mm)	Ø30	Ø30	Ø40	Ø40	Ø45	Ø50	Ø60	Ø70	Ø80	Ø70	Ø80	Ø100
Width B: (mm)	150	180	200	240	290	270	340	450	590	400	450	620
Length C: (mm)	200	230	300	300	430	430	480	600	670	750	810	870
Suitable for engcon RF:	S30	S30	S40	S40	S45	S50	S60	S70	S80	S1	S2/27	S3



Standard attachment dimensions and alternative designation

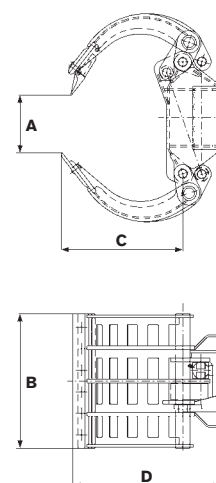
Model	GS30/ 150	GS30/ 180	GS40/ 200	GS40/ 240	GS45	GS50	GS60	GS70	GS80	GS1	GS2	GS3
Axle diameter A: (mm)	Ø30	Ø30	Ø40	Ø40	Ø45	Ø50	Ø60	Ø70	Ø80	Ø70	Ø80	Ø100
Width B: (mm)	150	180	200	240	290	270	340	450	590	400	450	630
Length C: (mm)	200	230	300	300	430	430	480	600	670	—	—	—
Suitable for engcon RF:	S30	S30	S40 RF10 B10	S40	S45 RF12 B12	S50 RF14 KM05	S60 RF16 S6 KM08	S70 RF25 KM09	S80 RF32	S1 RF20 B20	S2/27	S3 RF30



Sorting and handling grab

Model	SK05	SK10	SK15	SK20	SK30
Grab width A: (max. mm)	1,110	1,660	1,790	1,990	2,570
Grab width A: (min. mm)	0	0	0	0	0
Cutting width B: (mm)	505	715	860	860	1,170
Jaw length C: (mm)	460	680	790	870	1,080
Height D: (mm)	580	790	960	1,070	1,360
Gripping force: (kN)	8.7	15	19	25	45
Pressure: (MPa)	21	21	21	21	21
Weight: (kg)	180	325	540	620	1,195
Base machine weight: (t)	3–7	6–14	12–18	16–24	22–32

Supplied with or without upper bracket, or with rotator depending on the customer's requirements.



Timber grabs

Model	TG16S	TG22 PRO	TG28S	TG35S	TG42S	TG55S
Weight: (kg)	56	125	250	275	340	710
Max load: (kg)	1,300	5,000	5,000	5,000	7,000	10,000
Max opening: (mm)	925	1,226	1,540	1,900	1,900	2,510
Width: (mm)	260	432	395	460	470	500
Grip area: (m²)	0.16	0.20	0.28	0.35	0.42	0.55

Pallet forks

Model	GH1000	GH1000	GH1200	GH1200	GH1200	GHH1200	GHH1200
Width: (mm)	1,000	1,000	1,200	1,200	1,200	1,200	1,200
Fork: (mm)	100x40x1 200	100x40x1 200	125x45x1 200	125x45x1 200	125x45x1 200	125x45x1 200	125x45x1 200
Weight: (kg)	180	180	280	310	310	310	310
Bracket:	S45	S50	S60	S70	S1	S60	S1
TP500	2,9 T	2,9 T	4,7 T	4,7 T	4,7 T	4,7 T	4,7 T

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Ground vibrators/compactor plates

Model	PP350	PP600	PP950	PP3200
Packing power: (kg)	3,500	6,000	9,500	3,200
Weight incl bracket: (kg)	390	620	900	470
Length A: (mm)	890	1,050	1,270	1,000
Width B: (mm)	620	720	900	500-700
Height C: (mm)	450	520	600	590
Pack surface: (m²)	0.42	0.58	0.90	0.4-0.56
Frequency: (rpm/Hz)	2,100	2,100	2,100	1,700/28
Hydraulic flow: (lpm)	75	120	120	34

Rotating brushes

Model	SR800	SR1300	SR1600	SR1800	SR2000
Width: (mm)	800	1,300	1,600	1,800	2,000
Weight incl bracket: (kg)	210	240	260	275	300
Oil flow min/max: (l/min)	20/60	20/60	20/60	20/60	20/60

Deep-digging bucket

Top bracket:	DB1	DB1	DB2	DB2	DB2	DB2	DB2	DB3	DB5	DB6	DB6	DB7	DB7	DB9	DB9	DB11	DB11	DB11	DB12
Volume: (l)	50	50	70	70	90	90	90	120	160	200	200	250	250	350	350	400	400	400	500
Width: (mm)	400	400	450	450	550	550	550	550	600	600	600	700	700	700	700	700	700	700	800
Weight: (kg)	35	35	50	50	55	55	60	75	100	125	140	170	175	230	235	280	285	300	315
Top bracket:	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S40	S40	S40	S40	S45	S45	S50	S45	S50	S45	50	S60	S50

Model	DB12	DB14	DB14	DB16	DB16	DB18	DB18	DB18	DB21	DB21	DB23	DB23	DB26	DB26	DB26	DB29	DB29	DB29
Volume: (l)	500	600	600	750	750	900	900	900	1,100	1,100	1,250	1,250	1,400	1,400	1,400	1,600	1,600	1,600
Width: (mm)	800	900	900	1,000	1,000	1,000	1,000	1,000	1,100	1,100	1,200	1,200	1,300	1,300	1,300	1,450	1,450	1,450
Weight: (kg)	330	560	590	600	630	680	715	710	940	920	1,150	1,150	1,330	1,350	1,320	1,440	1,470	1,450
Top bracket:	S60	S60	S1	S60	S1	S60	S70	S1	S70	S1	S70	S2	S70	S80	S2	S70	S80	S2

Water/Drainage bucket

Model	TB09	TB12	TB14	TB16
Volume: (l)	350	500	600	700
Width: (mm)	700	800	800	900
Weight: (kg)	345	340	510	550
Top bracket:	S45	S60	S60	S60

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Cable bucket

Model	CB2	CB2	CB3	CB3	CB3	CB5	CB5	CB10	CB10	CB10C*	CB10C*	CB15	CB15	CB15C*	CB15C*	CB20	CB20	CB20	CB25
Volume: (l)	60	60	90	90	90	130	130	160	160	130	130	350	350	350	350	400	400	400	550
Width: (mm)	290	290	290	290	290	340	340	460	460	300	300	560	560	300	300	660	660	660	600
Weight: (kg)	35	35	55	55	55	70	85	160	165	170	170	290	320	255	285	320	360	360	590
Top bracket:	S30 150	S30 180	S30 150	S30 180	S40	S40	S45	S45	S50	S45	S50	S60	S1	S60	S1	S60	S70	S1	S70

* Conical

Grading bucket

Model	GB2	GB2	GB2	GB2	GB4	GB4	GB5	GB5	GB6	GB6	GB8	GB8	GB11	GB11	GB13	GB13
Volume: (l)	90	90	130	130	200	200	250	250	300	300	370	370	500	500	600	600
Width: (mm)	900	900	900	900	1,000	1,000	1,200	1,200	1,200	1,200	1,300	1,300	1,400	1,400	1,600	1,600
Weight: (kg)	75	75	85	85	130	145	145	155	155	165	260	260	370	370	450	490
Top bracket:	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S40	S45	S40	S45	S40	S45	S45	S50	S45	S50	S60	S1

Model	GB14	GB15	GB15	GB17	GB17	GB17	GB20	GB20	GB20	GB20	GB24	GB24	GB29	GB29	GB29
Volume: (l)	650	750	750	900	900	900	1,100	1,100	1,100	1,100	1,400	1,400	1,600	1,600	1,600
Width: (mm)	1,600	1,600	1,600	1,700	1,700	1,700	1,700	1,700	1,700	1,700	2,000	2,000	2,000	2,000	2,000
Weight: (kg)	460	660	690	700	740	730	940	980	970	980	1,150	1,150	1,460	1,490	1,460
Top bracket:	S60	S60	S1	S60	S70	S1	S60	S70	S1	S2	S70	S2	S70	S80	S2

Asphalt cutter

Model	TC05	TC10	TC10	TC15	TC20	TC20	TC20
Diameter: (mm)	Ø370	Ø470	Ø470	Ø470	Ø470	Ø470	Ø470
Cutting depth: (mm)	100	150	150	150	150	150	150
Weight: (kg)	40	55	60	70	90	110	200
Top bracket:	S40	S45	S50	S60	S70	S80	S1

Rippers

Model	R5	R5	R10	R10	R10	R15	R20	R20	R20	R30	R30	R30
Height: (mm)	600	600	700	700	700	900	1,200	1,200	1,200	1,400	1,400	1,400
Weight: (kg)	55	65	110	110	152	180	340	380	360	680	720	690
Top bracket:	S30	S40	S45	S50	S60	S60	S60	S70	S1	S70	S80	S2



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