

engcon®

INTERNATIONAL EDITION

TOOLS CATALOGUE
Excavator



Relax – we can help you to make the right connection

Congratulations! You're holding engcon's latest catalogue which, as usual, contains a number of new products for better efficiency, profitability AND safety.

engcon's safety coupler, Q-Safe™ will change everyday life for many excavator machinists and everyone working around their excavators. With Q-Safe™ we take over a part of the driver's responsibility that the bucket/attachment is properly locked in place. Q-Safe™ features a triple safety aspect and it will be just about impossible to operate with an attachment or tool that is not fully locked.

We also continue unveiling new Generation 2 models; an entirely new series of tiltrotator developed for tomorrow's needs with, for example, a 45-degree tilt angle, central lubrication, powerful tilt and rotation effect. We have previously launched EC226, EC219 and most recently EC209. During the autumn of 2014 we'll be launching the EC206 for machines in the 3.5–6 ton class, and in the beginning of 2015 we'll be introducing the EC214 for machines in the 9–14 ton class on the Nordic markets, and 6 months later we'll be releasing our new products on the non-Nordic markets.

With Q-Safe™ and Gen 2 we are continuing our work under the collective name of Non Accident Generation – engcon's name for an increased focus on safety at the workplace.

Welcome to a safer future!



engcon reserves the right for any printing errors. Functions and specifications may be changed without prior notice.



NEW
New generation
of EC-Oil™.

NEW
EC206
EC209
EC214

NEW
EC206-R
EC209-R
EC214-R

NEW
MIG2 joystick with
three proportional
functions and hand
support.

NEW
Q-Safe™

NEW
New models of
buckets.

Product overview

04 System engcon

06 Job report: Q-Safe™

09 EC-Oil™

10 Tiltrotators

EC02B: 1.5–3.5 tons	12
EC05B: 3–7 tons	12
EC206: 3.5–6 tons	13
EC209: 6–9 tons	13
EC10B: 6–14 tons	14
EC214: 9–14 tons	14
EC15B: 12–18 tons	15
EC219: 14–19 tons	15
EC226: 19–26 tons	16
EC30: 22–32 tons	16

17 Rotators and tilt hitches

EC05B-R–EC30-R: 3–32 tons	17
TFS30–TFS80: 1–32 tons	17
TFS1–TFS2: 18–32 tons	17

18 DC2 control system

20 Optional extras

MIG2 joystick	20
High-flow swivels	21

22 Integrated grabs

GR05–GR30: 3–32 tons	23
GR20RR	23

24 Quick coupler Q-Safe™

26 Quick couplers and adapter brackets

Q-Safe™	26
S30–S80, S1–S3	27
GS45-ECO, GS60-ECO, GS70-ECO	27
GS30–GS80, GS1–GS3	27

28 Hydraulic tools

Sorting and handling grab	29
Timber grabs	29
Pallet forks	30
Rotating brushes	30
Ground vibrators/compactor plate	31

32 Mechanical tools

Deep excavation bucket	33
Trenching bucket	33
Cable bucket	34
Grading buckets	34
Asphalt cutters	35
Rippers	35

36 Specifications

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, gives 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





Q-Safe™ keeps Daniel safe and makes the site safer

When Daniel Edgren switches buckets on his excavator, a warning light on the boom flashes and an audible warning sounds. It doesn't stop until the tool is properly coupled.

"My workmates complain that I make such a racket," laughs Daniel, and continues

"Joking aside; Q-Safe™ brings a feeling of security, both for me and everyone around the machine."





“Q-Safe™ brings a feeling of security, both for me and everyone around the machine.”



Daniel Edgren, excavator operator for the past 15 years, works at Bröderna Engströms Entreprenadmaskiner AB in Örebro. The company was founded in 1956 and is today run by the second generation of the Engström family, the brothers Jan-Olow and Per-Eric. The company carries out civil engineering works over much of Sweden, and has around 120 construction machines, of which about half are tracked and wheeled excavators of various sizes.

“Just about every excavator from 5 to 25 tons is fitted with tiltrotators from engcon. Our operators can't work efficiently without tiltrotators,” explains Hans Nilsson, Technical Manager at Engströms.

One of the major assignments right now is the refurbishment of the 1960s Vivalla district in Örebro, a project that is expected to continue for twelve years and where Engströms is a sub-contractor to Skanska. This is where Daniel works in his brand-new Cat 315D, fully equipped with an engcon EC219 tiltrotator, the new Q-Safe quick coupler and EC-Oil. Not forgetting the jewel in the crown – the DC2 control system.

“The machine only has 80 hours on the clock, so everything's still new. But it feels great,” says Daniel.

Great feeling

Getting acquainted with the new functions

takes no time at all. The biggest lasting difference is the feeling – the feeling that work has become safer.

“The lights and audible alerts that warn when the tool is not properly connected are really good. No-one can fail to notice them. And the hydraulic power reduction when something is connected incorrectly makes things even safer.

Daniel has not personally been involved in any incidents with tools that have come loose, but he knows it can happen and he's come close.

“We're sometimes in a hurry changing tools and then get distracted by something. Then we continue with the switch, forget to lock the tool and start working. That can't happen with Q-Safe.”



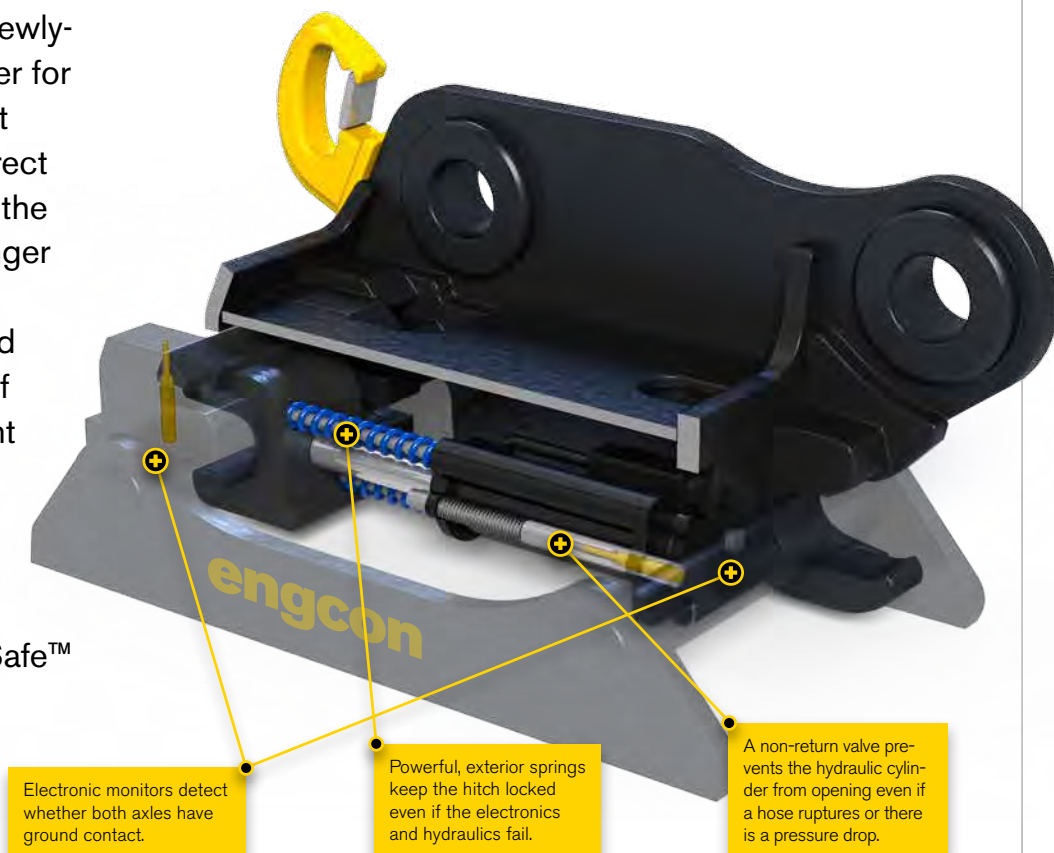
LEARN MORE
ABOUT
Q-Safe™

How Q-Safe™ works

Q-Safe™ is engcon's newly-developed quick coupler for excavators. The biggest innovation is that incorrect tool connection due to the 'human factor' is no longer possible.

Q-Safe™ has threefold safety and forms part of engcon's 'Non Accident Generation' in which safety awareness hallmarks the whole product range.

Read more about Q-Safe™ on pages 24–26.



Safe couplers soon a requirement



According to Hans Nilsson, Technical Manager at Engströms, the entire industry has longed for Q-Safe™.

“We’ve collaborated with engcon for many years and have only had good experiences. When Q-Safe™ arrived, we wanted to test it right away.”

Like many other companies in the industry, Engströms has been involved in incidents with dropped tools despite safety on site enjoying the highest priority.

“Buckets have come loose on a few occasions, but no-one was injured, thank heavens. It’s often the result of the human factor, but the advantage with Q-Safe is that safety is built in and cannot be affected by the operator.”

Hans Nilsson is convinced that safety hitches will soon be a requirement from major contractors like Skanska, Peab and NCC.

“Safety goggles, hard hats and hi-vis clothing raise no eyebrows today, and reversing cameras on construction vehicles are a common requirement. I believe demands for safety hitches will soon be a fact, regardless of legislation. It is also quite natural to demand safety hitches now that they are available as a relatively inexpensive investment.”

EC-Oil™

– change tasks in an instant

Finally – fully hydraulic couplers available to everyone. Fully hydraulic couplers have been around for several years, but it has only been possible to use them in special tasks due to their prohibitive price.

All this is changing with the simple function of EC-Oil™.

The newly upgraded EC-Oil™ is engcon's system for automatic connection of hydraulics, electronics and central lubrication to any hydraulic attachments, and is specially adapted for our new series of tiltrotators and our new and safe Q-Safe™* quick coupler. As the sole supplier, we can help you with a total solution – from control systems, couplers 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 Q-Safe tool coupler, above and below the tiltrotator and on the tool itself, it is possible, if maximum breakout force is required, to disconnect from the tiltrotator and connect the quick coupler directly to a hydraulic or mechanical tool or attachment. This saves weight, resulting in fuel savings and a better total economy. Together they create a system of tools that enable your work to proceed quickly, efficiently and profitably.

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



pinch injuries and wear and tear. It is the market's only fully hydraulic coupler system that can connect 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 facing excavators. The connectors are the most durable on the market – proven through destructive testing at 400 bar operating pressure and field tests in dirty environments. With EC-Oil, moreover, you connect to central lubrication automatically.

*From 2014, engcon will gradually be supplying Q-Safe as the standard quick coupler in the sizes S45, S50, S60 and S70. This applies both as the machine hitch and under engcon's tiltrotator.



- ▶ EC02, EC05 & EC206, 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: 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 couplers 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.
- ▶ Gen 2-tiltrotators with S45-, S50-, S60- and S70-quick couplers will be successively supplied with the Q-Safe quick coupler as of 2014. S45, S60 and S70 can subsequently be selected with or without EC-Oil.

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.

During 2014, the fourth and fifth models of Generation 2 tiltrotators were introduced; EC206, for excavators in the 3.5–6 ton weight range, and EC214, for excavators between 9 and 14 tons. EC206 deliveries began in the autumn of 2014 in the Nordic countries and in the beginning of 2015 in countries outside the Nordic region. EC214 deliveries began at the end of 2014 in the Nordic countries and in the middle of 2015 in the rest of the world. Together with its "big sisters", the 2-series covers excavators between 3.5–26 tons.

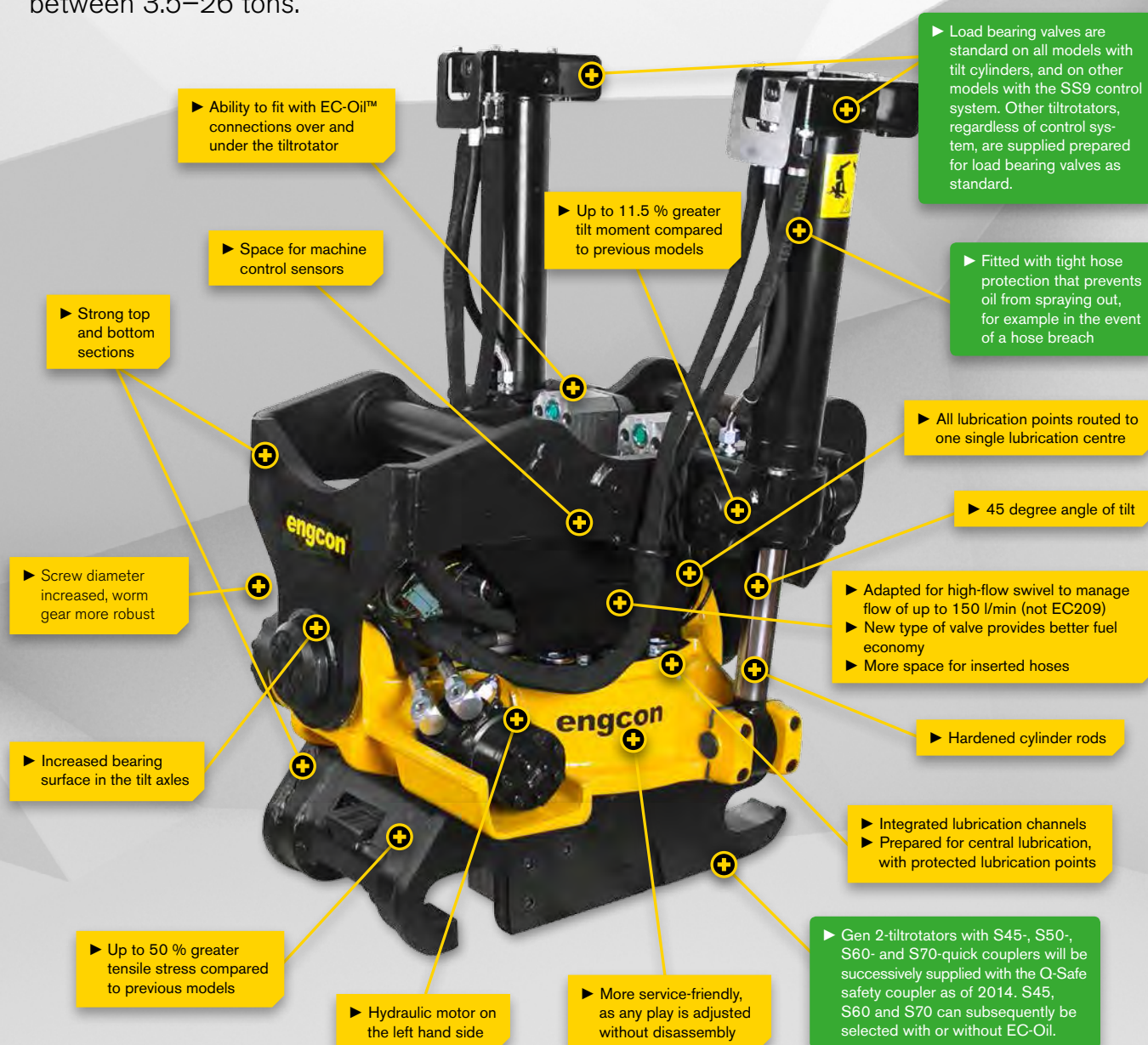
The 2-series tiltrotators are robust, easy to service and have an increased tilt angle. They feature a hydraulic motor on the left-hand side, well-shielded and visible to the operator, and are also fully prepared for central lubrication and high-flow swivel and naturally EC-Oil™.



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.

During 2014 the fourth and fifth models of Generation 2 tiltrotator were introduced; EC206 adapted to the 3.5–6 ton excavators, and EC214 for excavators between 9–14 tons*. Together with its big sisters, the 2-series covers excavators between 3.5–26 tons.



* EC206 was launched in the Nordic region in autumn 2014 and in the non-Nordic countries in the start of 2015. EC214 was launched at the end of 2014 in the Nordic region and in the non-Nordic countries in mid 2015.

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 coupler can be adapted to fit all machines on the market.

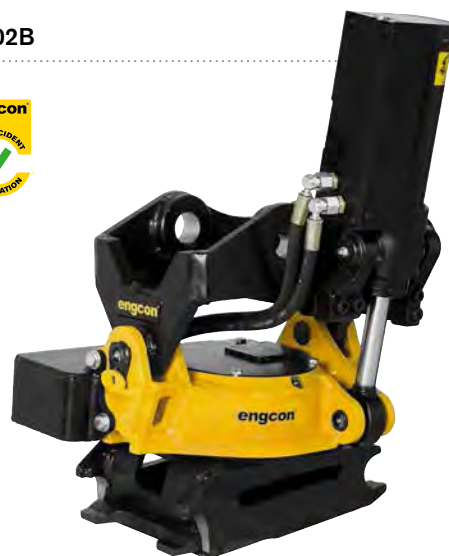
- Rotation ∞
- $\pm 40^\circ$ tilt
- Complies with European safety standards

Quick coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC02B can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

Electrical system: Standard 12-volt.

EC02B



EC05B: Adaptable for all excavators in the 3–7 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

Quick coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC05B can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

Electrical system: Standard 12-volt.

Extra functions: Integrated grab (page 22–23)

EC05B



**PHASED OUT
DURING
2014/2015**

Successively replaced by EC206 during 2014.

EC206: Adaptable for all excavators in the 3.5–6 ton weight class

NEW*

The new EC206, the fourth model in Generation 2. Just like its big sisters it has features that are a rap on the knuckles for most of the competition. Integrated lubrication channels which are routed to one single lubrication point, a 45 degree tilt angle, amongst other features. The EC206 is also fitted with a six-channel swivel allowing both an integrated grab and extra hydraulic functions. Load bearing valves are fitted as standard.

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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC206 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

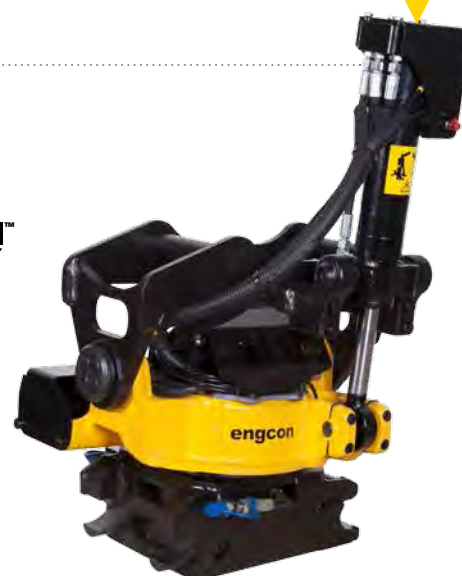
Electrical system: Standard 12-volt.

Extra functions: Integrated grab (page 22–23)

EC206



EC-Oil™
READY



- ▶ Integrated lubrication channels, all lubrication points connected to one single lubrication point
- ▶ Strong top and bottom sections
- ▶ 45° tilt angle
- ▶ The tilt cylinder has integrated load bearing valves fitted as standard – applies to all control systems
- ▶ Grab cylinders** on grab models** are fitted with dump valves to avoid temporary pressure drops when changing direction
- ▶ Adjust lateral play without removal
- ▶ Tilt axles now have increased bearing surfaces
- ▶ Adapted for engcon's DC2 proportional control system for stepless, highest precision control and remote support via the mobile network
- ▶ A six-channel swivel allows installation of both an integrated grab and an extra hydraulic function
- ▶ Built for high tensile stress
- ▶ High tilt and rotate torque
- ▶ The latest valve technology gives lower fuel consumption.

* EC206 is to be launched on the Nordic markets during 2014, and in the non-Nordic countries in the beginning of 2015

**Extra equipment

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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC209 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

EC209



EC-Oil™
READY



- ▶ Integrated lubrication channels, all lubrication points connected to one single lubrication centre
- ▶ Strong 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
- ▶ Adjust lateral play without removal
- ▶ Tilt axles with greater bearing surface
- ▶ Adapted for engcon's DC2 proportional control system for stepless, highest precision control and remote support via the mobile network
- ▶ Models with coupler sizes S45, S50 and S60 will be successively supplied with the Q-Safe quick coupler fitted as standard
- ▶ Built for high tensile stress
- ▶ High tilt and rotate torque
- ▶ The latest valve technology gives lower fuel consumption.

* 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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC10B can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

EC10B



**PHASED OUT
DURING 2014/2015**

Replaced by EC209 and EC214 in 2014/2015.

EC214: Adaptable for all excavators in the 9–14 ton weight class

The new EC214, the fifth model in Generation 2. Just like its big sisters it has features that are a rap on the knuckles for most of the competition. Integrated lubrication channels which are routed to one single lubrication point and a 45 degree tilt angle, for instance.

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 coupler: We offer most of the quick couplers available on the market. The Q-Safe quick coupler will be introduced as standard on sizes S45, S50 and S60.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC214 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

EC214



**EC-Oil™
READY**



- ▶ Integrated lubrication channels, all lubrication points connected to one single lubrication point
- ▶ Strong 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 grab and SS9 models* are fitted with dump valves to avoid temporary pressure drops when changing direction
- ▶ Adjust lateral play without removal
- ▶ Tilt axles now have increased bearing surfaces
- ▶ Models with coupler sizes S45, S50 and S60 will be successively supplied with the Q-Safe quick coupler fitted as standard
- ▶ Adapted for engcon's DC2 proportional control system for stepless, highest precision control and remote support via the mobile network
- ▶ Built for high tensile stress
- ▶ High tilt and rotate torque
- ▶ The latest valve technology gives lower fuel consumption.

* EC214 is being introduced on the Nordic markets in the end of 2014, and in mid-2015 on the non-Nordic markets.

**Extra equipment

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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC15B can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC219 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

EC219



**EC-Oil™
READY**



- ▶ Prepared for central lubrication, with protected lube points
- ▶ Integrated lubrication channels
- ▶ All lube points routed to one single lubrication centre
- ▶ Strong top and bottom sections
- ▶ 45° tilt angle
- ▶ Hydraulic motor on left side
- ▶ Tilt axes increased bearing surface. Diameter 85 mm
- ▶ Adjust lateral play without removal
- ▶ Better space for incoming hoses
- ▶ Adapted for high-flow swivel with flow rates up to 150 l/min
- ▶ Models with coupler size S60 will be successively supplied with the Q-Safe quick coupler fitted as standard
- ▶ Tilt cylinders ready for load-bearing valves (important when operating with pallet forks)
- ▶ Built for high tensile stress
- ▶ Adjust lateral play without removal
- ▶ High tilt and rotate torque
- ▶ The latest valve technology gives lower fuel consumption.

EC226: Adaptable for all excavators in the 19–26 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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC226 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

Electrical system: Standard 24-volt electrical system.

Extra functions:

- Integrated grab (page 22–23).
- 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 SS9).

EC226



EC-Oil™
READY



- ▶ Prepared for central lubrication, with protected lube points
- ▶ Integrated lubrication channels
- ▶ All lube points routed to one single lubrication centre
- ▶ Strong top and bottom sections
- ▶ Space for machine control sensors
- ▶ 45° tilt angle
- ▶ Hydraulic motor on left side
- ▶ 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 150l/min
- ▶ Tilt cylinders ready for load-bearing valves (important when operating with pallet forks)
- ▶ Adapted for engcon's DC2 proportional control system for stepless, highest precision control and remote support via the mobile network
- ▶ Models with coupler sizes S70 will be successively supplied with the Q-Safe quick coupler fitted as standard
- ▶ Built for high tensile stress
- ▶ High tilt and rotate torque
- ▶ The latest valve technology gives lower fuel consumption.

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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The EC30 can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

Extra functions:

- Integrated grab (page 22–23)
- 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 SS9)

EC30



EC-Oil™
READY



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

Rotators

EC05B-R*, EC206-R, EC209-R, EC10B-R*, EC214-R, EC15B-R*, EC219-R, EC226-R, EC30-R: Adaptable for all excavators and backhoes in the 3.5–32 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 coupler: We offer most of the quick couplers available on the market.

Control systems: Choose between several different control systems based on your machine's characteristics. The rotators can be fitted with engcon's DC2 proportional control system to provide a real advantage, as it gives you stepless control, maximum precision and remote support via the mobile network.

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

Extra functions: Integrated grab (page 22–23).

EC05B-R* | EC206-R | EC209-R | EC10B-R* | EC214-R
EC15B-R* | EC219-R | EC226-R | EC30-R



Models with S45, S50, S60 and S70 will be successively supplied with the Q-Safe safety coupler as of 2014–2015.

Technical specifications: page 38

Tilt hitches

TFS30–TFS80, TFS1–TFS2: Adaptable for all excavators in the 1.5–32 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-coupler system S1 (20), S2 (27)
- Complies with European safety standards
- High grade steel for strength and low weight

Models with S45, S50, S60 and S70 will be successively supplied with the Q-Safe safety coupler as of 2014–2015.

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



Technical specifications: page 38

DC2

The smart control system that saves time and money and benefits the environment

engcon's DC2 control system for tiltrotators is a really smart control system with remote support via a smartphone. Thanks to a free app on the phone, the driver can calibrate the control system and obtain service via the mobile network.

This saves time in adjusting settings and troubleshooting and it is good for the environment. Support questions are very often about adjustments to the control system. With this app it is all done through the phone, meaning no service vehicle needs to be called out to sort the problem on site.

DC2 can also be delivered with functions for track or wheel control and boom control.



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





DC2

Advantages:

- 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 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

NEW

Can be fitted with three rollers per control and seven buttons, or six buttons and FNR (Forwards Neutral Reverse)

Can be retro-fitted with optional functions

Up to 3 rollers per control

Ergonomic design

Meets the requirements of the EU Machinery Directive 2006/42/EC and SS-EN ISO 13849-1, Safety of Machinery

Can be adapted to all control systems on the market

New bracket gives a superior, easy fitting

Up to 7 buttons per control

Hand support as standard

Easy to adjust the hand angle

Monitoring with double breaker functions for maximum safety

MIG2 makes work easier

The MIG2 control for excavators combines maximum ergonomics and functionality. The control has been developed for maximum ergonomics, without compromising on increased safety and control functions.

MIG2 can be adapted to all control systems on the market and has been developed in collaboration with contractors and a company specialising in industrial design. The joystick can be fitted with three rollers and seven buttons – twice as much

with two joysticks. The driver is also able to work with maximum efficiency and at the same time avoid bodily stress and strain.

The control has an integrated hand support that the wrist rests on without affecting the excavator motion. The hand support is flexible and can be adapted to different hand sizes.

MIG2 isn't only ergonomical, it provides the driver/operator new means of working. The control's rollers are intended for use by the thumb, index and middle fingers – something that's unique to us.

In this way the driver/operator can combine six rollers simultaneously.

High-flow swivels

HFSE: Higher hydraulic flows as standard

During 2015, engcon's EC214, EC219, EC226 and EC30 tiltrotators will be gradually equipped as standard with the HFSE (High Flow Standard Electric) swivel, which allows higher hydraulic flows.

- Depending on the tool selected and the configuration, the swivel, with its NG10 valve, will deliver flows up to 120 litres per minute. This enables the operation of tools requiring high flow rates on extra attachment points.
- The EC214 is the first model to be equipped with HFSE as standard; the remaining models will follow.
- In addition to six hydraulic channels, HFSE also has an electrical "channel" – a modification for engcon's award-winning Q-Safe quick coupler, which will successively become standard on all tiltrotators with S45, S60, S70 and S80 couplers.

HFSE



Specifications

Model	High-flow swivel HFSE
Flow, extra outlet: (l/min)	Up to 120*

* The flow is dependent on the selected configuration type. Back pressure and other factors affect the capacity. Contact engcon for further information.

HFX: High-flow swivel for particularly 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.

HFX



Specifications

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

► 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 and SS10 only.

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 engineering work, 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, EC206, EC209, EC10B, EC214, EC15B, EC219, EC226 and EC30
- 3 finger claws as standard
- Complies with European safety standards

Advantages GR20B:

- ▶ Grab width 820–950* mm depending on the type of quick coupler fitted
 - ▶ Heavy-duty grab protection ▶ Improved axle locking
- * S60GR20, QS60GR20 and S1GR20: 820 mm
S70GR20, QS70GR20 and S2GR20: 950 mm

Advantages GR30 (S80 and S3):

- ▶ Grab width up to 1080 mm

GR05 | GR10 | GR20B | GR30



GR20RR: Integrated grab for EC214 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 safest quick coupler in the world

Q-Safe™ is engcon's newly-developed quick coupler for excavators. The biggest innovation is that incorrect tool connection due to the 'human factor' is no longer possible. The system simply takes over part of the driver's responsibility for safety.

Q-Safe™ has triple safety and forms part of engcon's "Non Accident Generation" in which safety awareness permeates the entire product range.

engcon's Q-Safe is the safest quick coupler on the market, where the risk of incorrect coupling is designed out. With a fully equipped Q-Safe fitted to the excavator, the bucket or tool selected must have ground contact that exerts a given pressure. In other words, buckets, tools and attachments can't be removed whilst in the air.

- 1** As soon as the Q-Safe quick coupler makes contact with the bucket or attachment's first pin, the surrounding area is alerted by loud audible and bright visual signals. At the same time, the excavator's slew function is restricted (option).
- 2** As long as the bucket or attachment is not properly locked on both axes, the audible and visual warnings will continue. The slew function block also continues to be activated.
- 3** When both pins have full contact, the audible/visual alerts are cancelled and the slew restriction released. The machine is ready to work with the bucket/attachment fully connected. The tool can now only be removed when it is resting on the ground at a given pressure (option).

The Q-Safe™ quick coupler features safety functions such as:

- a** electronic monitoring via two independent sensors makes sure both pins make contact with the tool.
- b** a non-return valve prevents the hydraulic cylinder opening even in the event of a hose rupture/pressure drop.
- c** powerful, exterior springs keep the hitch locked even if the electronics and hydraulics fail.
- d** furthermore, the rear pin is locked by a wedge-shaped, smart steel lip that prevents attachment dislodgement regardless of what may happen in any of the other safety functions.

1

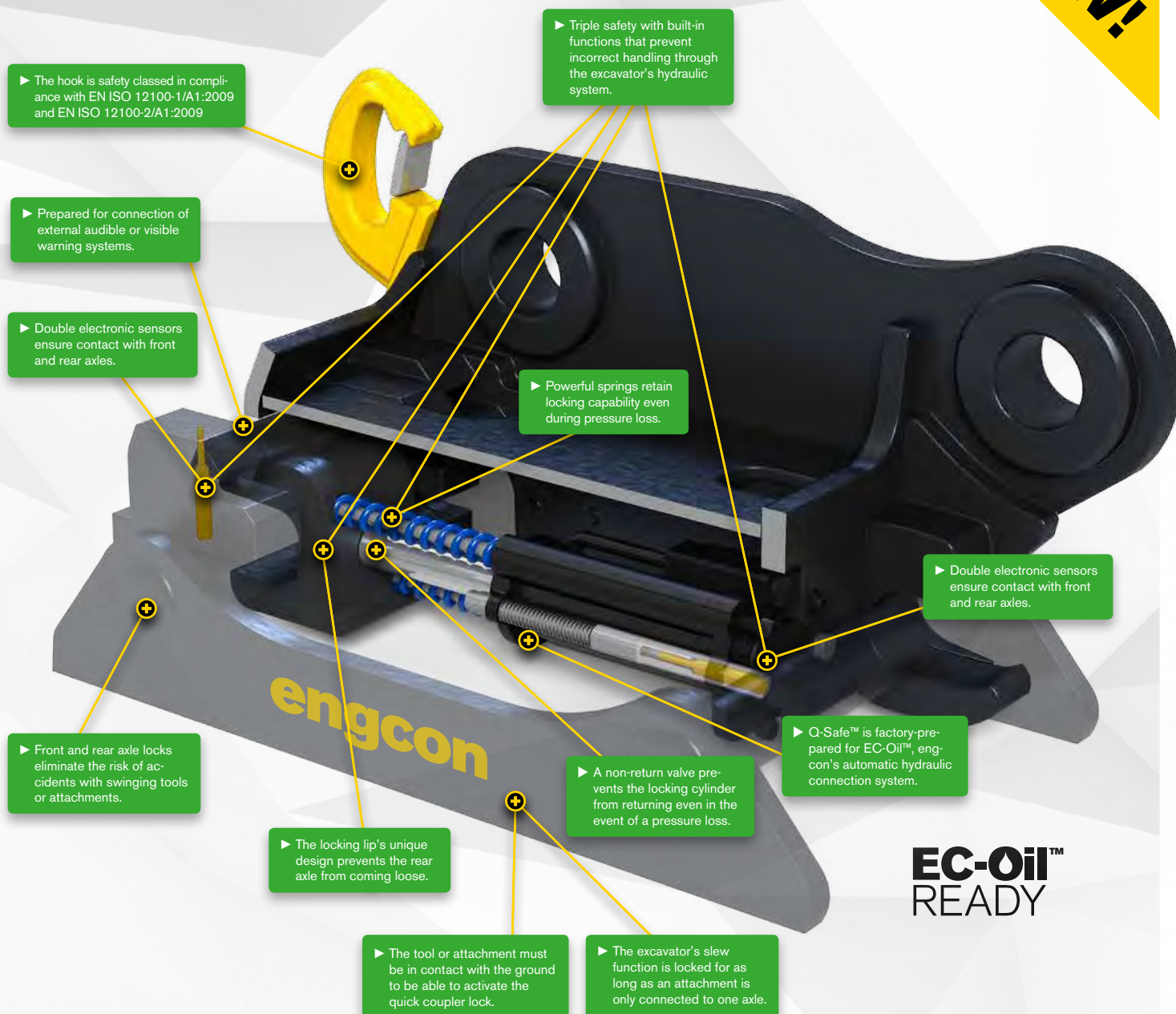


2



3



NEW!**EC-Oil™
READY****Q-Safe™ offers triple safety via:**

electronic monitoring, hydraulic locking and mechanical locking. With Q-Safe, the safety system shoulders some of the operator's responsibility for connecting the attachment correctly, thus providing a safer workplace. In its basic version, Q-Safe is supplied with a warning system. The full system with ground contact for releasing attachments and slew restriction is a maximum safety option; install it in consultation with the machine supplier concerned.

From 2014, engcon will gradually be supplying Q-Safe as the standard quick coupler in the sizes S45, S50, S60 and S70. This applies both as the machine hitch and under engcon's tiltrotator.

You're extra safe with Q-Safe™

- + Q-Safe functions independently of the tiltrotator's control system and is prepared for EC-Oil, which allows automatic connection of hydraulics and electrics, as well as central lubrication of hydraulic attachments.
- + Q-Safe safety locking is dimensioned to withstand full excavation effect in all directions.
- + The locking cylinder is designed and dimensioned to withstand the maximum power that can arise to open the hitch by external excavation forces for the size of machine concerned.
- + The locking surface angle in relation to the excavation forces is 90° or more during the entire movement, which means the hitch is constantly attempting to close itself due to the excavation forces.
- + Q-Safe meets the following current safety standards: EN474, SS-EN ISO 12100-1 and SS-EN ISO 12100-2, as well as the upcoming standard ISO 13031.

Q-Safe™ – the world's safest quick coupler

QS45–QS70/QS45-ECO–QS70-ECO:

For all excavators in the 6–25 ton weight class

Features Q-Safe™

- Hydraulic locking with triple safety:
 - Electronic surveillance detects when both axles are in contact
 - A non-return valve prevents the hydraulic cylinder from opening even if a hose ruptures or there is a pressure drop
 - Powerful, exterior springs keep the hitch locked even if the electronics and hydraulics fail
- The tool can only be removed when it is resting on the ground at a given pressure (option)
- Front and rear locks eliminate the risk of accidents caused by swinging tools and attachments
- Q-Safe is supplied as standard with external audible and visible warning signals to alert the surrounding area
- Until the tool is safely and fully attached, the excavator's slew function is restricted (option)
- Q-Safe QS45, QS50, QS60 and QS70 are factory-prepared for EC-Oil and its functions with automatic electrical and hydraulic connections**
- Play-free design with double contact surfaces compared to many other coupler systems
- Longer "shark jaws" for easier and safer picking up of tools
- Welded in high-tensile steel
- The locking lip's unique design prevents the rear axle from coming loose
- Available both as machine hitch and as a quick coupler underneath the tiltrotator

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 coupler.

- Fits all excavators in the stated weight class irrespective of control system
- The hook is safety-classed in compliance with EN ISO 12100-1/A1:2009 and EN ISO 12100-2/A1:2009

In its basic version, Q-Safe is supplied with a warning system. The full system with ground contact for releasing attachments and slew restriction is an option; order it in consultation with the machine supplier concerned.

**From 2014, engcon will gradually be supplying Q-Safe as the standard quick coupler in the sizes S45, S50, S60 and S70. This applies both as the machine hitch and under engcon's tiltrotator.



The Q-Safe™ quick coupler for excavators won an award for safety and innovation at GaLaBau 2014.

Quick couplers

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



In 2014/2015 this type of quick coupler will be replaced by the Q-Safe safety coupler for the S45, S50, S60 and S70 sizes. Find out more on page 23.

Technical specifications: page 39

Adapter 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 couplers
- Robust, dependable and cost-efficient
- Welded in high tensile steel

GS45-ECO–GS70-ECO

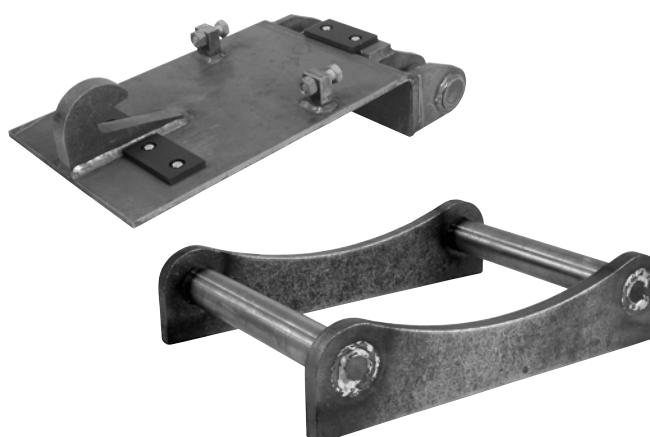


Adapter brackets

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

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

GS30–GS80 | GS1–GS3



Technical specifications: page 40

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 coupler 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 vibrator/compactor plate

- ▶ 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**



SK20 with teeth



SK20 with rotator



SK15 with EC-Oil connection

Technical specifications: page 40

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 40

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

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

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.

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

DB01–DB32: For all excavators in the 1.5–32 ton weight class

engcon deep excavation 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.

The bucket may be fitted with the following accessories on request:

- Tooth kit*
- Tooth cover
- Blade teeth

* The standard tooth kit for installation on engcon buckets is a Cat J tooth system. For other tooth systems, check availability with engcon.



DB01–DB32

NEW – DB32



Technical specifications: page 41

Trenching bucket

TB09–TB16: For all excavators in the 6–30 ton weight class

engcon's trenching 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 trenching 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

CB01–CB25: For all excavators in the 1.5–32 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.

CB01–CB25



Grading bucket

GB01–GB29: For all excavators in the 1.5–32 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.

GB01–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 3–32 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 42

Rippers

R5–R30: For all excavators in the 1.5–32 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 42

Specifications

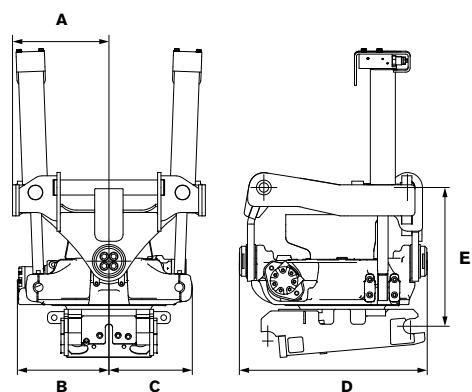
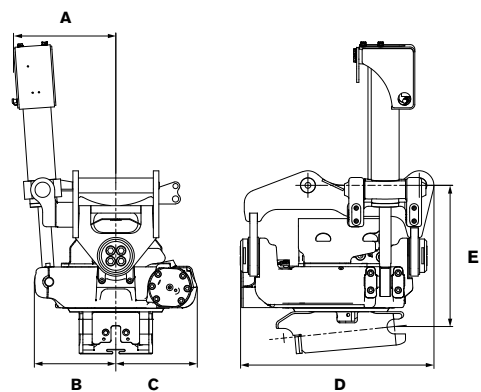
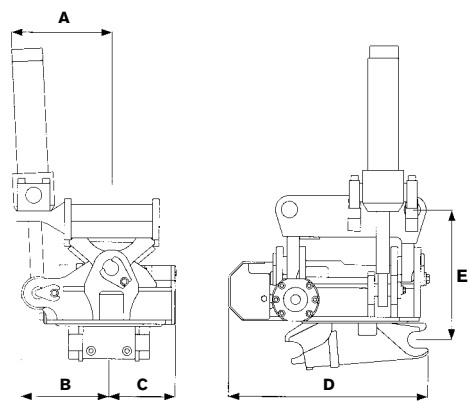
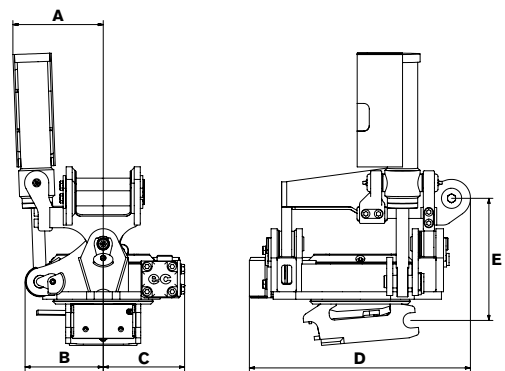
Tiltrotators

Model	EC02B
Width A: (mm)	from 205
Width B: (mm)	155
Width C: (mm)	161
Total length D: (mm)	from 396
Construction height E: (mm)	from 262
Weight: (kg)	from 65
Tilt range:	2×40°
Rec hydraulic flow SS5/SS10: (l/min)	25
Rec hydraulic flow SS9 tilt/rotation: (l/min)	7/20
Working pressure: (MPa)	22
Standard mountings:	S30, S40
Max. bucket width recommended by engcon: (mm)	900
Max. tensile stress: (kNm)	20
Base machine weight: (t)	1.5–3.5

Model	EC05B
Width A: (mm)	260
Width B: (mm)	215
Width C: (mm)	160
Total length D: (mm)	485
Construction height E: (mm)	from 300
Weight: (kg)	from 155
Tilt range:	2×40°
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

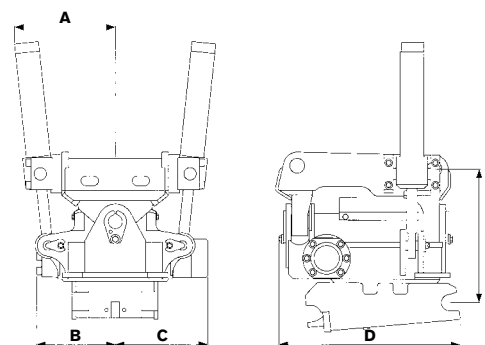
Model	EC206
Width A: (mm)	260
Width B: (mm)	220
Width C: (mm)	219
Total length D: (mm)	from 527
Construction height E: (mm)	from 380
Weight: (kg)	from 175
Tilt range:	2×45°
Rec hydraulic flow SS5/SS10: (l/min)	40
Rec hydraulic flow SS9 tilt/rotation: (l/min)	15/30
Working pressure: (MPa)	22
Standard mountings:	S40, S45, S50
Max. bucket width recommended by engcon: (mm)	1,200
Max. tensile stress: (kNm)	45
Base machine weight: (t)	3.5–6

Model	EC209
Width A: (mm)	286
Width B: (mm)	275
Width C: (mm)	250
Total length D: (mm)	from 563
Construction height E: (mm)	from 416
Weight: (kg)	from 280
Tilt range:	2×45°
Rec hydraulic flow SS5/SS10: (l/min)	60
Rec hydraulic flow SS9 tilt/rotation: (l/min)	35/40
Working pressure: (MPa)	22
Standard mountings:	S45, QS45, S50
Max. bucket width recommended by engcon: (mm)	1,300
Max. tensile stress: (kNm)	74
Base machine weight: (t)	6–9

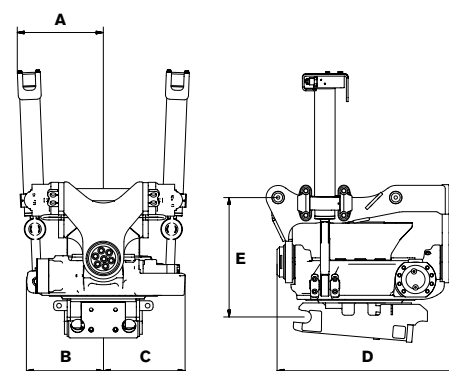


engcon reserves the right to make changes to designs without prior notice

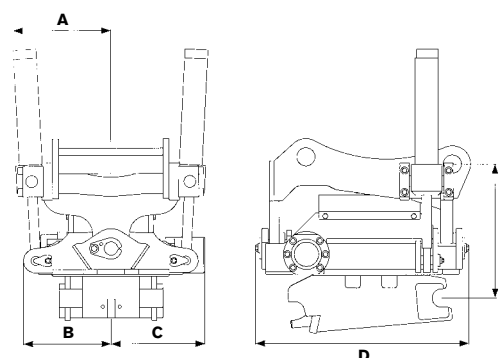
Model	EC10B
Width A: (mm)	320
Width B: (mm)	245
Width C: (mm)	290
Overall length D: (mm)	540
Construction height E: (mm)	from 390
Weight: (kg)	from 270
Tilt range:	2×40°
Rec hydraulic flow SS5/SS10: (l/min)	60
Rec hydraulic flow SS9 tilt/rotation: (l/min)	30/40
Working pressure: (MPa)	22
Standard mountings:	S45, S50
Max. bucket width recommended by engcon: (mm)	1,400
Max. tensile stress: (kNm)	90
Base machine weight: (t)	6–14



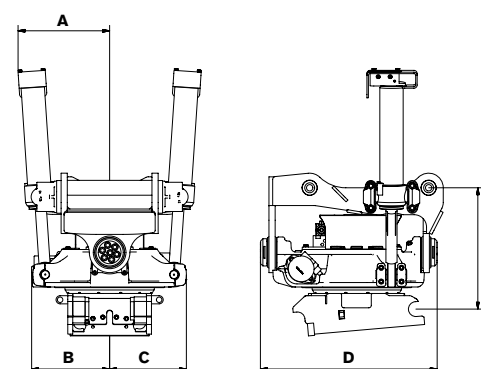
Model	EC214
Width A: (mm)	318
Width B: (mm)	303
Width C: (mm)	285
Overall length D: (mm)	704
Construction height E: (mm)	500
Weight: (kg)	from 360
Tilt range:	2×45°
Rec hydraulic flow SS5/SS10: (l/min)	80
Rec hydraulic flow SS9 tilt/rotation: (l/min)	35/50
Working pressure: (MPa)	22
Standard mountings:	QS45
Max. bucket width recommended by engcon: (mm)	1,600
Max. tensile stress: (kNm)	126
Base machine weight: (t)	9–14



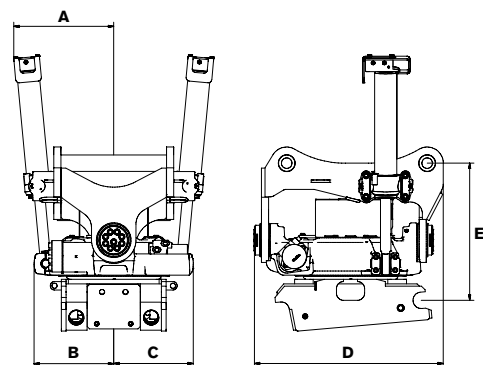
Model	EC15B
Width A: (mm)	320
Width B: (mm)	285
Width C: (mm)	307
Overall length D: (mm)	698
Construction height E: (mm)	from 420
Weight: (kg)	from 340
Tilt range:	2×40°
Rec hydraulic flow SS5/SS10: (l/min)	80
Rec hydraulic flow SS9 tilt/rotation: (l/min)	35/50
Working pressure: (MPa)	22
Standard mountings:	S60
Max. bucket width recommended by engcon: (mm)	1,600
Max. tensile stress: (kNm)	130
Base machine weight: (t)	12–18



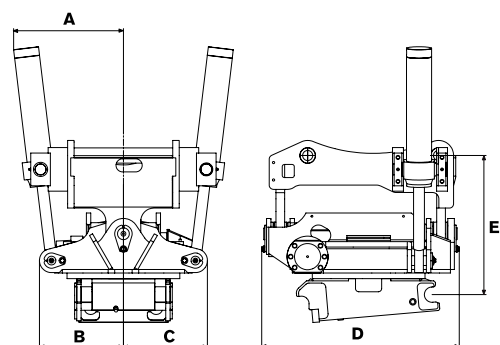
Model	EC219
Width A: (mm)	371
Width B: (mm)	315
Width C: (mm)	310
Overall length D: (mm)	from 737
Construction height E: (mm)	from 480
Weight: (kg)	from 420
Tilt range:	2×45°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	65/70
Working pressure: (MPa)	22
Standard mountings:	S60, QS60
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)	427
Width B: (mm)	338
Width C: (mm)	338
Overall length D: (mm)	from 807
Construction height E: (mm)	from 607
Weight: (kg)	from 590
Tilt range:	2×45°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	70/70
Working pressure: (MPa)	22
Standard mountings:	S70, QS70
Max. bucket width recommended by engcon: (mm)	2,000
Max. tensile stress: (kNm)	270
Base machine weight: (t)	19–26

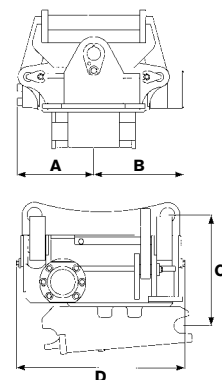


Model	EC30
Width A: (mm)	from 527
Width B: (mm)	385
Width C: (mm)	385
Overall length D: (mm)	from 895
Construction height E: (mm)	from 657
Weight: (kg)	from 850
Tilt range:	2×40°
Rec hydraulic flow SS5/SS10: (l/min)	120
Rec hydraulic flow SS9 tilt/rotation: (l/min)	86/80
Working pressure: (MPa)	22
Standard mountings:	S70, S80
Max. bucket width recommended by engcon: (mm)	2,200
Max. tensile stress: (kNm)	240
Base machine weight: (t)	22–32



Rotators

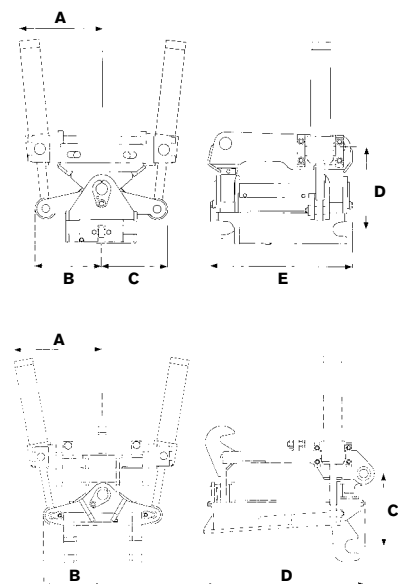
Model	EC05B-R	EC206-R	EC209-R	EC10B-R	EC214-R	EC15B-R	EC219-R	EC226-R	EC30B-R
Width A: (mm)	210	220	275	240	303	285	396	426	390
Width B: (mm)	160	119	250	290	285	307	315	340	390
Construction height C: (mm) from	275	380	416	350	500	380	480	500	550
Length D: (mm)	485	527	563	560	704	700	737	760	900
Weight: (kg)	135	175	280	250	360	310	400	560	530
Flow requirement: (l/min)	15–40	40	60	20–40	80	40–60	120	120	40–80
Working pressure: (MPa)	18–21	18–22	18–22	18–21	18–22	18–21	18–22	18–22	18–21
Base machine weight: (t)	3–7	3,5–6	6–9	6–14	9–14	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



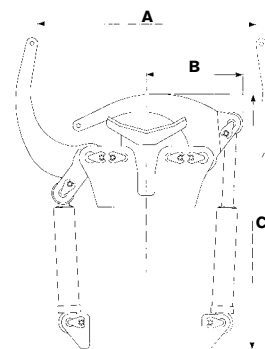
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Integrated grabs

Model	GR05	GR10	GR20B	GR30**
Largest grip width A: (mm)	350	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 17.5 MPa: (kg)	1,378	1,248	1,864	1,586
Clamping force at 21 MPa: (kg)	1,654	1,497	2,234	1,956

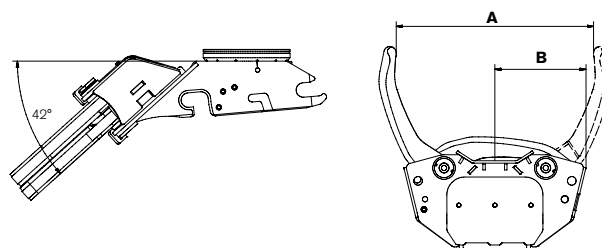
* Depending on top bracket.

** 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)	1,540
Clamping force at 21 MPa: (kg)	1,750
Angled at 35–42° depending on the bracket	
Detachable	
Protected cylinders	

Note! GR20RR cannot be combined with all tool brackets on the market. Contact engcon for further information.

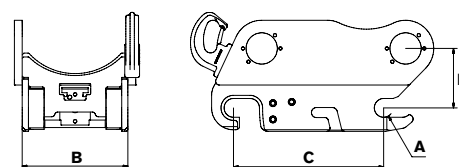


Q-Safe™

Model	QS45	QS50	QS60	QS70**
Axle diameter A: (mm)	Ø45	Ø50	Ø60	Ø70
Width B: (mm)	290	270	340	400
Length C: (mm)	430	430	480	600
Construction height D: (mm)*	185	140	190	220
Weight: (kg)*	100	105	180	180
Flow: (l/min)	55	21	100	100
Max pressure: (MPa)	21	6–12	21	21
Base machine weight: (t)	6–12	6–12	12–18	16–25

* Depending on machine bracket

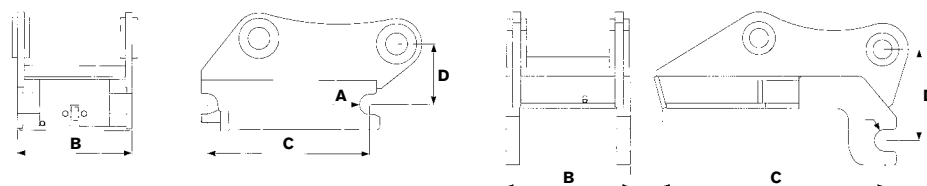
** Introduced during 2014



Quick couplers

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	12–19	16–30	25–32	18–24	22–32	25–32

* Depending on machine bracket

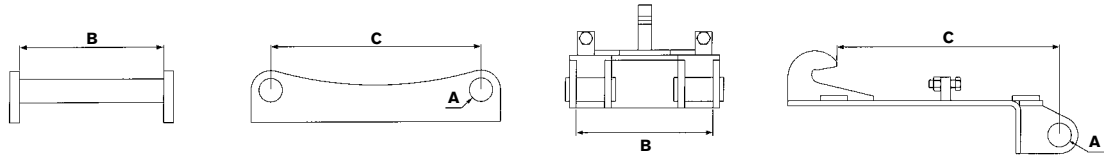


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Top brackets

Standard attachment dimensions and alternative designation

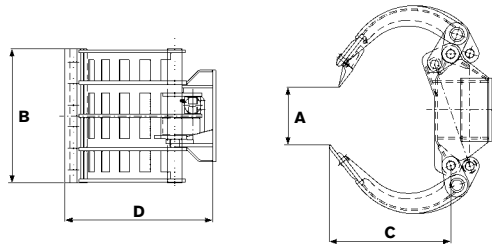
Model	GS30/ 150	GS30/ 180	GS40/ 200	GS40/ 240	GS45	GS50	GS60	GS70	GS80	GS1	GS2	GS3
Axle diameter A: (mm)	Ø30	Ø30	Ø40	Ø40	Ø45	Ø50	Ø60	Ø70	Ø80	Ø70	Ø80	Ø100
Width B: (mm)	150	180	200	240	290	270	340	450	590	400	450	630
Length C: (mm)	200	230	300	300	430	430	480	600	670	750	810	870
Suitable for engcon RF:	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)	3–6	6–12	12–16	16–22	22–32

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



Timber grabs

Model	TG16S	TG22	TG22 PRO	TG23	TG25	TG28S	TG35S	TG42S	TG55S
Weight: (kg)	56	98	128	120	138	250	275	340	710
Max load: (kg)	1,300	1,500	2,000	1,500	2,000	5,000	5,000	7,000	10,000
Max opening: (mm)	925	1,310	1,226	1,210	1,450	1,540	1,900	1,900	2,510
Width: (mm)	260	310	432	401	371	395	460	470	500
Grip area: (m²)	0.16	0.22	0.20	0.23	0.25	0.28	0.35	0.42	0.55
Permitted machine weight up to: (tons) (permanent installation)	2	3	6	3	6	10	12	14	20
These values are applicable irrespective of the attachment on the grapple.									

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)	100×40×1,200	100×40×1,200	125×45×1,200	125×45×1,200	125×45×1,200	125×45×1,200	125×45×1,200
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

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	290
Oil flow min/max: (l/min)	20/60	20/60	20/60	20/60	20/60

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

Deep-digging bucket

Model	DB01	DB01	DB01	DB02	DB02	DB02	DB02	DB02	DB03	DB05	DB06	DB06	DB07	DB07	DB09	DB09	DB11	DB11	DB11	DB12	DB12
Volume: (l)	30	50	50	70	70	90	90	90	120	160	200	200	250	250	350	350	400	400	400	500	500
Width: (mm)	400	400	400	450	450	550	550	550	550	600	600	600	700	700	700	700	700	700	700	800	800
Weight: (kg)	28	35	35	50	50	55	55	60	75	100	125	140	170	175	230	235	280	285	300	315	330
Top bracket:	S30/ 180	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S40	S40	S40	S40	S45	S45	S50	S45	S50	S45	S50	S60	S50	S60

Model	DB13	DB13	DB14	DB14	DB16	DB16	DB18	DB18	DB18	DB21	DB21	DB23	DB23	DB26	DB26	DB26	DB29	DB29	DB29	DB32
Volume: (l)	600	600	650	650	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	1,800
Width: (mm)	850	850	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	1,700
Weight: (kg)	500	570	520	590	600	630	680	715	710	940	920	1,150	1,150	1,330	1,350	1,320	1,440	1,470	1,450	1,920
Top bracket:	S60	S1	S60	S1	S60	S1	S60	S70	S1	S70	S1	S70	S2	S70	S80	S2	S70	S80	S2	S80

Trenching 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

Cable bucket

Model	CB01	CB02	CB02	CB03	CB03	CB03	CB05	CB05	CB08	CB10	CB10	CB10C*	CB10C*	CB15	CB15	CB15C*	CB15C*	CB20	CB20	CB20	CB25
Volume: (l)	35	60	60	90	90	90	130	130	155	160	160	130	130	350	350	350	350	400	400	400	550
Width: (mm)	240	290	290	290	290	290	340	340	400	460	460	300	300	560	560	300	300	660	660	660	600
Weight: (kg)	26	35	35	55	55	55	70	85	95	160	165	170	170	290	320	255	285	320	360	360	590
Top bracket:	S30/ 180	S30/ 150	S30/ 180	S30/ 150	S30/ 180	S40	S40	S45	S45	S45	S50	S45	S50	S60	S1	S60	S1	S60	S70	S1	S70

* Conical

Grading bucket

Model	GB01	GB02	GB02	GB02	GB02	GB04	GB04	GB05	GB05	GB06	GB06	GB08	GB08	GB11	GB11	GB13	GB13
Volume: (l)	55	90	90	130	130	200	200	250	250	300	300	370	370	500	500	600	600
Width: (mm)	800	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)	51	75	75	85	85	130	145	145	155	155	165	260	260	370	370	450	490
Top bracket:	55/ 180	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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