

SAFE PROFITABILITY

FOR EXCAVATORS

3,300–72,800 LBS

(1.5 – 33 METRIC TONS)

engcon[®]



EC-Oil[™]
STANDARD

Why we're making EC-Oil™ standard free of charge

Industry Advancements are moving forward at an aggressive pace, and at engcon, being ready for the next step is our mission. In recent years we've refined our tiltrotators, created the Q-Safe quick coupler, and developed EC-Oil to be paired with the DC2 Control system for complete hydraulic tool changes from the cab. Each of these three systems come together to be stronger than their individual parts. An ideal choice for maximum convenience, safety, efficiency and profitability. After giving it some thought – and it didn't take long – we decided that EC-Oil should be supplied as standard equipment free of charge on our machine couplers, tiltrotators and hydraulic tools.*

As a result, engcon is the only tiltrotator producer in the world to offer a unique, holistic system as a package solution at no extra charge. As moonwalker Neil Armstrong would say, this is one small step for engcon, but one great leap for the excavator industry.

No hassle, no messing

Our decision means you no longer have to climb out of the cab and struggle with awkward, messy hydraulic connections and hoses when you connect your tiltrotator to the machine coupler, or when connecting hydraulic tools beneath the tiltrotator. EC-Oil means no more compromises. You connect and disconnect the tiltrotator quickly and easily whenever you need to without having to leave the cab. And it's just as easy to switch hydraulic tools beneath the tiltrotator. And should you need additional hydraulic functions or extra high hydraulic flow, engcon's quick couplers come ready for an extra EC-Oil block.

We take overall responsibility

And because we own the entire system, we assume full responsibility – another major advantage for our customers. A single contact and one call will provide you with a complete solution.

engcon's history is based on a determination to provide our end customers with a better, safer work environment while also helping them be more efficient and earn more money. Because our determination continues unabated, making EC-Oil standard equipment on our tiltrotators, quick couplers and hydraulic tools at no extra charge was a natural step for us.



Stig Engström
Owner and founder
of engcon

AUTOMATIC QUICK COUPLER SYSTEM – STANDARD, FREE OF CHARGE*



NEWS!
EC-OIL AS
STANDARD!*



EC-Oil™

* When you order a twin hitch engcon tiltrotator with DC2 control system, EC-Oil blocks are supplied as standard between the machine hitch and the tiltrotator.

If you order a engcon hydraulic attachment at the same time as the combination above, EC-Oil is fitted as standard in the tiltrotator's quick hitch.

All of engcon's hydraulic tools with QS45-QS80 ALWAYS include EC-Oil as a standard at no extra cost.

Please contact engcon for more information.

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Just a few years ago, automatic oil coupling systems were an expensive luxury. But not anymore. We're introducing our EC-Oil automatic hydraulic connector as standard at no extra charge.* Although this is an extremely high standard, it's the natural way to go for us, as we never compromise on safety or your profitability.

Create the perfect package solution for your excavator with a machine coupler, tiltrotator, control system and hydraulic tools. At no extra charge,* you get an EC-Oil automatic hydraulic connector in the machine coupler, above and beneath the tiltrotator and on all of our hydraulic tools. In other words, everything you need to connect it all in a matter of seconds without leaving the cab.



engcon Environmental Certification
SS-EN ISO 14001:2004



engcon Quality Certification
SS-EN ISO 9001:2008



engcon is not responsible for any printing errors.
Functions and specifications may change without prior notice.

SWITCH JOBS IN AN INSTANT

EC-Oil is the key to our system. It means you can quickly switch hydraulic tools from the cab or decouple the tiltrotator when you need more breakout force. The EC-Oil automatic hydraulic connector now comes as standard equipment free of charge*. In some jobs, this can save an hour or more every day compared to manual connection – and time is money...

As a single supplier, we can help you with a complete solution – everything from control systems, couplers and tools to support safety and profitability.

Use EC-Oil™ for instant tool and attachment changes directly from the cab. Using EC-Oil with the Q-Safe quick coupler both above and below the tiltrotator unit, it is possible in the event of maximum breakout force being required, to disconnect the tiltrotator and connect the quick coupler directly to a hydraulic or mechanical attachment.

This also saves weight, which means fuel savings and improved total efficiency. Together they create a system of tools that allow you to work quickly, efficiently and profitably.

EC-Oil™ is designed for maximum operational safety in demanding environments. The EC-Oil Unit has no visible hoses or electrical cables that move around when connecting. This reduces the risk of pinching and wear. It is the market's only fully hydraulic coupler system that can tackle connecting pressurized tools at full system pressure.



The proprietary oil and electrical plugs are engineered 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 just under 24,000 PSI (1600 bar) operating pressure and during innumerable tests in contaminated environments. EC-Oil™ also connects to central lubrication automatically.

EC-OIL IN A NUTSHELL

- + Included free of charge above and beneath the tiltrotator with the simultaneous purchase of a machine coupler, tiltrotator, control system and a hydraulic tool.*
- + Lets you change hydraulic tools in just 10 seconds without leaving the cab
- + Connects all hydraulic tools automatically to machines from 13,200-88,200 lbs (6-40 metric tons)
- + Can be retrofitted to all types of hydraulic tools, regardless of manufacturer **
- + Requires no installation for return oil
- + Extremely durable connectors allow tool connection at full system pressure
- + Non-drip system = environmentally friendly
- + Eliminates problems with manual hydraulic connections

* Read more on page 2

** Check specifications and flow requirements

CALCULATE YOUR SAVINGS

If nothing goes wrong, connecting a tool manually takes around 90 seconds. With Q-Safe and EC-Oil, the same tool change takes about 10 seconds.

The number of times we switch tools naturally varies, but certain tasks require around 50 tool changes a day. On days like that, EC-Oil will save you more than one hour!

EC-Oil
STANDARD
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**EC-OIL WITH
CASE DRAIN**



FAST, SAFE

TOOL CHANGES



EC-Oil™
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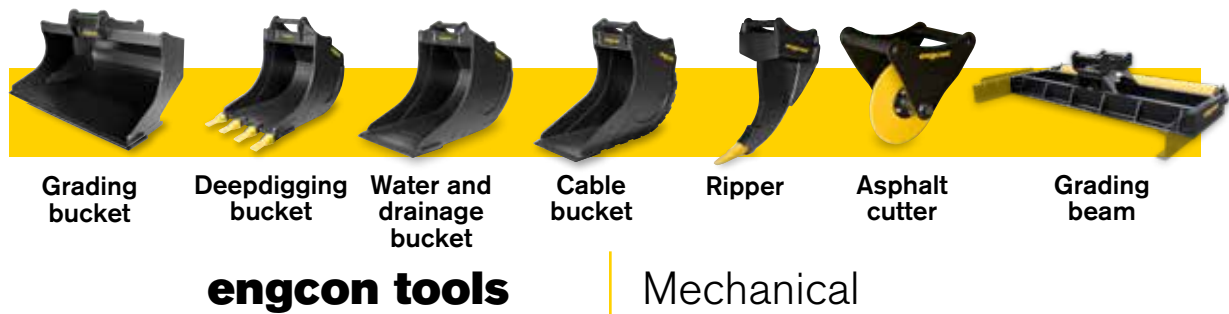


Automatic Quick Coupler System

Combine as required:

Use a quick coupler and the tiltrotator (1) or disconnect the tiltrotator and connect your tools directly into the machine's quick coupler when you need maximum breakout force or lifting capacity (2).

All without leaving the cab!





engcon introduces a new, larger quick hitch

Production begins in 2019

engcon introduces an automatic quick hitch for excavators up to 40 tonnes (88,200 lbs).

The new product, dubbed EC-Oil 80, is an automatic hydraulic connector suitable for the Q-Safe 80 quick hitch for excavators up to 40 tonnes (88,200 lbs) and for large, high-flow tools.

In 2018 engcon announced it had begun testing the EC-Oil 80 prototype, the largest of its automatic hydraulic connector models. It enables the operator to remain seated in the excavator when connecting or disconnecting the tiltrotator and other hydraulic tools. Jumping in and out of the machine and struggling with awkward, pressurized, messy hydraulic connectors is a thing of the past.

During the spring of 2019, EC-Oil 80 will be ready for full-scale production. Automatic hydraulic oil connection to the quick hitch and tiltrotators will thus be accessible in the QS45-QS80 sizes, and will come as standard and free of charge when the customer simultaneously purchases a machine hitch, tiltrotator & DC2 control system.

"There is great demand for an automatic quick hitch for large excavators as the large manual hydraulic connectors from ¾ inch and up are heavy and difficult to handle," says Fredrik Jonsson, R&D manager at engcon Group.

The Q-Safe 80 will be the most powerful automatic quick hitch engcon has developed and it will come standard with an EC-Oil 70 block and two ¾ inch connectors and

connections for electrical power and central lubrication. This will meet many requirements and allow automatic connection to engcon's tiltrotators with equivalent EC-Oil connectors.

In addition to the standard configuration, the Q-Safe 80 quick hitch can also be fitted with an EC-Oil 80 block with two 1-inch hydraulic connectors, and ½ inch hydraulic connector and two electrical power connections.

This configuration will allow hydraulic flows of up to 250 litres (66 gal) through the Q-Safe 80 quick hitch.

"Should even more flow be necessary, we can replace the EC-Oil 70 block with an additional EC-Oil 80 block. This lets us reach a flow of 300 litres (79.3 gal), enabling the connection of large, high-flow hydraulic tools," says Jonsson.

engcon's hydraulic tools, compactors, sorting buckets, timber grabs, rotating brushes and pallet forks can be factory-fitted with EC-Oil automatic hydraulic connectors. engcon also offers upper section adapters that can be welded or bolted on to the customer's existing hydraulic tools.



Read more on page 2

engcon launches lighter pallet fork for better visibility and increased excavator load

engcon is now launching lighter versions of its hydraulic pallet forks. The new pallet forks improve tipping loads and increase load weights for excavators in the intermediate 6-12 tonne (13,200-26,500 lbs) range.

Pallet forks for excavators are an increasingly popular tool, and, when combined with a tiltrotator, they improve utility enormously. In many cases, excavators replace the wheel loader or forklift, as they can load and unload goods from trucks and shift pallets with goods at building sites. Thanks to the tiltrotator, the excavator need not be on the same level as the pallet, as the forks can be tilted and rotated to assume the correct position. Nor is as much space required when a wheel loader or truck must be unloaded or loaded, as the excavator can remain in the same position during unloading and loading.

"Following the increased use of pallet forks for excavators, we saw a growing need to adapt them for smaller excavators, and so we developed the GHH1200L (Light)," engcon design engineer Johan Johansson tells us. Johan explains that the focus on increased load weight is about capacity and safety alike. "Our new pallet fork is more than 100 kg (220 lbs) lighter than its predecessor, and this is a considerable difference for an excavator weighing 6 tonnes (13,200 lbs) and making use of its full reach. Not only are the new pallet forks lighter, but visibility has also been improved as the frame is lower than its forerunner."

engcon's new, lighter GHH1200L pallet fork will be available in two versions – one with a maximum load of 2,900 kg (6380 lbs) and one with 4,700 kg (10340 lbs) maximum load. Both are calculated at TP500 (max load 500 mm, 19.7 inches, out on the fork) and the QS45 standard hitch but can also be ordered with other attachment points. The GHH1200L has hydraulic steering of the forks and is as standard prepared for the automatic oil coupling EC-Oil.



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engcon launches new low-flow compactor series for excavators

Can be powered via tiltrotator – result is improved efficiency and greater safety

engcon announces that it will launch a series of entirely new low-flow compactors that can be powered by tiltrotators in 2019. According to engcon, this will extend the area of use considerably and make excavators both more efficient and safer.

engcon has manufactured compactors for excavators since the 1990s, but a minor setback was their demand for such a high hydraulic flow that they could not be connected directly to the tiltrotator's extra outlet. This meant the compactors could not be rotated freely. engcon has solved this problem with the newly developed series of low-flow compactors.

"We know that the compactor/excavator combination is ideal, as it means a major improvement in the work environment for ground workers, who must otherwise walk and control compactors down in the excavation site, whose nature can vary a great deal," says Johan Johansson, designer and project manager for engcon's new compactor series.

engcon is introducing three models, the PC3500, PC6000 and PC9500, where PC stands for Plate Compactor and the numerals indicate the compaction force in kg for each of the compactors.

Another major advantage when using compactors on excavators is the marked improvement in safety for ground workers.

For example, when compacting in deep excavations there is a great risk that the vibrations from the compactor will cause a collapse, burying people under volumes of heavy soil

JOHAN JOHANSSON,
DESIGNER AND PROJECT MANAGER

In addition to the improved working environment and reduced risk of personal injury, engcon's compactors can be used on inclines where conventional soil compaction with rollers or hand-operated compactors is not possible. This includes everything from ordinary road embankments to compaction around bridge supports, erosion protection along watercourses and more.



Read more on page 2

engcon introduces powerful detachable grab cassette

Designed for the largest tiltrotator

engcon announces it has launched production of the GRD70 grab cassette. The flexibility to detach the grab allows for even more efficiency gains.

engcon has for some time been alone in producing a unique type of grab cassette. With a simple manoeuvre that requires no screwing or manual connection of hydraulics, the excavator operator can connect or disconnect the grab cassette in less than one minute.

Next in the Series

The GRD20 grab cassette for engcon EC214 and EC219 tiltrotators with the Q-Safe 60 quick hitch was launched first. Then came the GRD10 for the engcon EC209 tiltrotator and the Q-Safe 45 and Q-Safe 50 quick hitches.

Now it's time for series production of the GRD70 grab cassette for engcon's biggest tiltrotator, the EC233, and the Q-Safe 70 quick hitch. It will be a powerful grab with the gripping force of 2.2 tonnes (4,900 lbs) and grab width approaching one meter.

Making Larger Excavators Even More Efficient

As with the smaller models, the operator connects or disconnects the GRD70 grab cassette in around one minute by activating the lock function with a simple hand manoeuvre to connect or disconnect the hydraulics and simultaneously attach or release the grab cassette. It's the ultimate solution for those who want the ability to quickly and easily disconnect the grab cassette when it's no longer needed.

The EC233 with the GRD70 grab cassette will be available in the US and Canada in July 2019

SPECS GRD70

Grab cassette for the EC233 with the QSD70 quick hitch

Max grab width: 960 mm (37.8 inches)

Min grab width: 13 mm (0.5 inches)

Clamping force: 2 234 kg (4,900 lbs) at 21 MPa

Weight: 166 kg (365.2 lbs)



EC-Oil
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engcon's new sorting grapples on display at bauma 2019

stronger, better suited to today's excavators and tiltrotators

engcon introduces a new generation of stone and sorting grapples. The new grapples will be on display at Bauma, the world's leading trade fair for construction machinery, held in Munich, April 8-14, 2019.

Fifteen years have passed since engcon launched the SK stone and sorting grabs, and over the years they have become increasingly common accessories used to make excavators even more useful and flexible. But because tiltrotators have developed a great deal in 15 years and excavators are now more powerful, engcon is adapting the grabs to meet today's needs by strengthening them and making them more suitable as accessories.

"In addition to strengthening the new grabs to make them more suitable for new generation tiltrotators and excavators, we will make sure they are more suitable as accessories," says Johan Johansson, designer at engcon Group.

Johansson reports that the grab arms will be closer together to more easily retain small items that otherwise would run through the grabs. They will also come ready for the installation of side plates. This will make converting a stone and sorting grab into a clamshell bucket quick and easy.

As before, the attachment points will be bolted on and ready for engcon's EC-Oil connector. All joints will be fitted with expander bolts to minimize play, cutters will be bolted-on for simple replacement and ready for mounting bucket teeth. The new grabs will be available in six sizes suitable for excavators from 1.5 tonnes up to 33 tonnes.

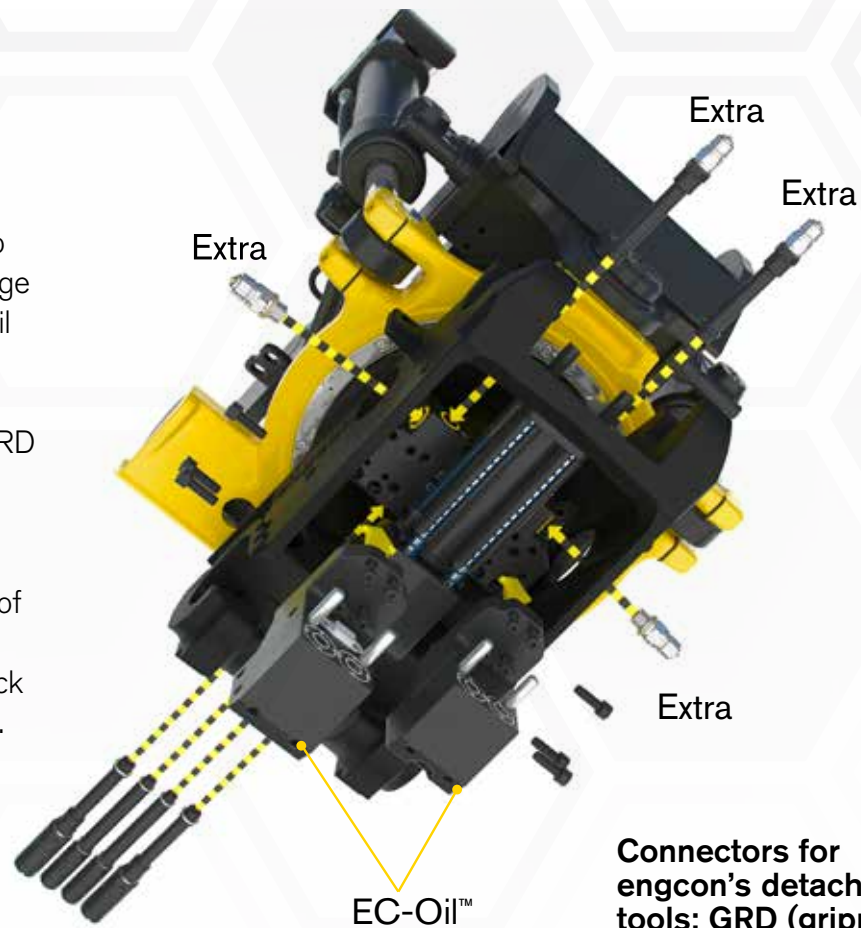
The SG12 will be the first model in the new grab series for release; it has a grab area of 0.34 m² (3.7 ft²) and is suitable for excavators in the 6-12 tonnes (13,200-26,500 lbs) class. Production is planned to begin in the summer of 2019.



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engcon announces its move from prototype and preproduction into the manufacturing stage on the hoseless EC-Oil automatic connection system and hydraulic connections for the GRD grab cassette and the SWD rotating brush. engcon is the world's leading manufacturer of tiltrotators – a kind of tilting and rotating quick coupler for excavators.



Connectors for engcon's detachable tools: GRD (gripper) and SWD (sweeper)

engcon's hoseless modular system moves into production

Making tiltrotators lighter, more service-friendly, allowing for higher flows

The hose-free design provides industry leading simplicity and an uncluttered quick hitch. Because the block is bolted on, without the need for hose runs, retrofitting engcon's EC-Oil automatic oil connection system is simple. And it's just as easy to install and retrofit EC-Oil to engcon's new detachable GRD grab cassette and SWD rotating brush. The hoseless system is developed for plug and play, bringing only what you need to the jobsite and maximizing profits.

New high-flow swivel

Along with the creation of the new modular quick hitch, engcon has developed a new high-flow swivel that permits hydraulic flows up to 200 l/min (53 gallons per min). This is achieved by feeding the hydraulic functions directly, without oil having to pass through the tiltrotator's valves. The new high-flow swivel also has a separate case

drain line, which allows oil to be drained via the tiltrotator. In addition, the swivel is built for pressures up to Five thousand PSI.

"This development is part of our unique modular concept where we offer the customer a basic product to which additional functions are easily added later. We also eliminate problems from hoses moving around in the quick hitch and leaking," says Fredrik Jonsson, R&D at engcon Group.

North American delivery of the modular quick hitches in the sizes QS60 for EC214 and EC219 will begin in May 2019, of QS70 for EC233 in July 2019, and of QS70 for EC226 in October 2019.

engcon | Profitable options

Build your own custom system with engcon.



QSC | Standardized locking system
For safe quick coupler operation.



MIG2 | Joystick
Select now or add later (fits all makes and types of control systems).



DC2 | Control system
Select now or add using your smartphone for remote support later.



ePS | engcon Positioning System
Select now or add later on models EC209, EC214, EC219, EC226, EC233 and EC30. Independent of the machine's control system.

Q-Safe | Quick coupler
Q-Safe™ safe quick coupler under the tiltrotator, detachable grabber, detachable sweeper and/or ground pressure sensing as well as slew/boom limitation later.

GEN2 | Tiltrotator



GRD Detachable grabber



SWD Detachable sweeper

EC-Oil



Automatic quick coupler for the excavator

EC-Oil automatic oil, electrical and central lubrication connection is standard equipment on our automatic quick couplers. Select now or add ground pressure sensing and slew/boom limitation later.



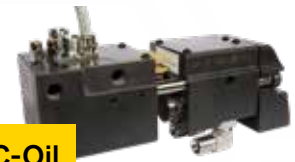
Side extensions

GRB | Grading beam

Add now or select side extensions later.

EC-Oil | Rapid tool changes

EC-Oil automatic oil, electrical & central lubrication connection is standard equipment.



EC-Oil



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Bracket | Bolt-on

Ground compactors, sorting grapple, grading beams, timber/combi grapples, sweeper – bolt-on bracket for easy coupling system replacement



Tiltrotators | 3,300-72,600 lbs

engcon's tiltrotators can be adapted to most excavators and backhoe loaders on the market, with machine weights of 3,300-72,600 lbs (1.5-33 metric ton).

Optional standard

engcon's tiltrotators are robustly built to a very high standard, and we provide the customer with many opportunities to select accessories right away or for retrofit. If you choose to retrofit, we've made it easy for you as in most cases it's just a matter of 'bolting on' the accessory later – whether it be one week or one year. For example, all engcon type D QS45-QS80 standard couplers come ready for the GRD detachable grab and SWD rotating brush. This means you can buy your tiltrotator without a grab and retrofit one whenever it suits you. And there's no problem retrofitting your machine with an excavator guidance system; all of our tiltrotators from the EC209 and up come ready for installing the ePS rotation sensor.

The following are standard on engcon tiltrotators

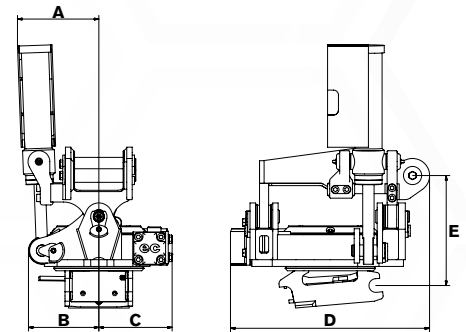
- + EC-Oil automatic oil connection system is standard equipment on tiltrotators*
- + Q-Safe quick coupler for maximum safety (From EC206 and up)
- + Comes ready for detachable grab GRD (QSD45, QSD50, QSD60, QSD70)
- + Comes ready for the SWD sweeper (QSD45, QSD50, QSD60)
- + Comes ready for the QSC locking system to avoid wrongly connected or dropped to buckets
- + Comes ready for a rotation sensor (ePS) for linking to the excavator guidance system (From EC209 and up)
- + Up to ± 45 -degree tilt angle for best access
- + Powerful tilting torque for heavy-duty jobs
- + Flows of up to 31.7 gpm on extra hydraulic outlets (From EC214 and up)
- + Central lubrication
- + Load-holding valves on tilt cylinders for maximum safety
- + Hardened piston rods
- + 2 years warranty



Management

- + Remote support** of control system via a smartphone app****
- + The ability to run 6 rollers simultaneously***
- + Track/wheel control**
- + Control, VA boom/joint**
- + Joystick wrist support for maximum comfort and best ergonomics

* Read more on page 2
 ** DC2
 *** DC2 in combination with MIG2
 **** Android



SPECIFICATIONS

Model	EC02B	EC204	EC206	EC209
Width A: (inches)*	7.1	10.5	11.3	10.9
Width B: (inches)*	6.1	6.3	8.7	9.8
Width C: (inches)*	6.3	6.7	8.6	10.7
Total length D: (inches)*	17.1	18.2	19.7	22.1
Construction height E: (inches)*	from 9.6	from 12.2	from 15	from 16.7
Weight: (lbs)*	169.4	255.2	374	631.4
Tilt range:	2x40°	2x45°	2x45°	2x45°
Rec. hydraulic flow DC2/SS10 (gpm):	6.6	7.9	10.6	15.9
Rec. hydraulic flow SS9 tilt/rotation: (gpm):	1.8/5.3	2.6/6.6	4.0/7.9	9.2/10.6
Max hydraulic pressure: (MPa)	3,191	3,191	3,191	3,191
Standard mountings:	S30	S40	S40, QS45, QS50	QS45, QS50
Max bucket width rec. by engcon: (inches)	35.4	39.4	47.2	51.2
Max torque: (lbf)	14,751	20,652	33,190	54,580
Base machine weight min/max: (lbs)	3,300–5,500	4,400–8,800	8,800–13,200	13,200–19,800

EC-Oil™

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* Applies with selection of QS45 - QS80 upper tilt section
 ** Requires ePS and works with Leica Geosystems, Scan laser, Topcon, Trimble, Novatron, MOBA (2017); check compatibility with your excavator guidance system supplier.
 *** Check compatibility with your excavator guidance system supplier
 **** Beginning with S60; other sizes introduced gradually during 2018

SPECIFICATIONS

EC214	EC219	EC226	EC233	Model
12.6	15.6	16.8	19.7	Width A: (inches)*
11.2	12.4	13.4	15.2	Width B: (inches)*
11.9	12.2	13.4	15.2	Width C: (inches)*
26.2	29	29.9	34.6	Total length D: (inches)*
from 18	from 18.9	from 19.7	from 26.5	Construction height E: (inches)*
847	983.4	1,390.4	1,786.4	Weight: (lbs)*
2x45°	2x45°	2x45°	2x45°	Tilt range:
21.1	31.7	31.7	31.7	Rec. hydraulic flow DC2/SS10 (gpm):
9.2/13.2	17.2/18.5	18.5/18.5	18.5/18.5	Rec. hydraulic flow SS9 tilt/rotation: (gpm):
3,191	3,191	3,191	3,626	Max hydraulic pressure: (MPa)
QS45, QS50, QS60	QS60	QS70	QS70, QS80, S2	Standard mountings:
63	66.9	78.7	86.6	Max bucket width rec. by engcon: (inches)
92,933	137,187	199,142	250,771	Max torque: (lbf)
19,800–30,900	30,900–41,900	41,900–57,300	52,900–72,800	Base machine weight min/max: (lbs)

*Standard attachment

Select **grab cassette** or **sweeper** **NOW** or **LATER**

New quick coupler and smart accessories for maximum safety and freedom of choice

Have you ever bought a product and later regretted that you didn't buy that extra feature with its added advantages? Relax; engcon has solved the problem for you by making our Q-Safe quick coupler even smarter. With a Q-Safe-Detachable (QSD) quick coupler on the tiltrotator you can connect or disconnect your retrofitable GRD grabber cassette or SWD sweeper when it suits you.

The technology involves fitting engcon tiltrotators that have QSD quick couplers with two robust hooks mounted at the front and space for extra hydraulics. This makes it easy to hook up engcon's retrofitable GRD detachable grabber cassette or SWD sweeper.

Grabber cassette

- Grabber Detachable Quick (GRD-Q)

The grab cassette hooks easily into the quick coupler Q-Safe™ D, whereby the grab cassette locks and the hydraulics connect with a single hand maneuver - a maneuver that takes less than a minute.

Grabber cassette

- Grabber Detachable manual (GRD)

GRD is also available with manual hydraulic connection in a version that bolts on to QSD the quick coupler. This takes a little longer to install and is a more permanent solution for those who do not need to remove the grab cassette or switch between grabber and sweeper.

The GRD grabber is angled down 15 degrees which gives a longer pickup reach.

Sweeper – Sweeper Detachable (SWD)

Just like the GRD grabber cassette, the SWD sweeper can be retrofitted on the Q-Safe™ D quick coupler by fastening the single hook on the coupler's

two suspension hooks and then locking the sweeper and connecting the hydraulics with a single hand maneuver – quick and easy. SWD is only available as quick version (Q) with locking and hydraulics connection with a single manipulation. The SWD is operated by a heavy duty hydraulic motor and is raised or lowered by a hydraulic cylinder. SWD is extremely flexible in its design and its width can be adjusted to handle exactly the work it needs to do.

In its smallest model, the SWD can, for example, be adapted for cable sweeping, which facilitates excavation of existing cables or pipes - and especially contributes to fewer dig-in damaged cables or lines as you dig down to a safe level and then sweep away the last bit.

Thanks to our new rotating brushes, the need for manual labor is also minimized, which contributes to a safer work site. Safety is everything to us at engcon.

Choosing SWD's wider version combined with the tiltrotator enables sweeping gravel or soil into the machine's own bucket, which makes it easier to clear surfaces of material that has to be cleaned off.

Maximum safety

In addition to our giving operators increased options, we are also improving safety. The two sturdy hooks provide enhanced safety because they continue to hold the grab cassette or rotating brush in place; even if the lock function should fail, the load or the grabber cassette or sweeper's own weight will press it securely against the quick coupler.

Q-Safe D | Quick coupler

Heavy duty mountings and stable locking on the Q-Safe™ quick coupler and space for extra hydraulics enables the use of more hydraulic tools such as engcon's new detachable grab and sweeper.



GRD | Detachable grabber



SWD | Detachable sweeper





Safety | Non Accident Generation

Where safety means profitability

at engcon, innovation and safety have always been priorities. Especially in our product development. Today, we label all of our products with our own Non Accident Generation safety mark – a safety assurance for our customers. This lets our customers know that their choice means a safer workplace and that the product complies with strict safety standards. What's more, we know that a safe workplace is a profitable workplace.

Welcome to engcon's new safety generation.

▶ **Q-Safe | EC-Oil | ePS | MIG2 | QSC | DC2**



Q-SAFE | Automatic quick couplers with maximum safety

No more dropped buckets

Dropped buckets and incorrectly connected tools due to the human factor are no longer possible. With the Q-Safe™ quick coupler & QSC lock control on the excavator, the risk for incorrect connection has been built out. With Q-Safe™ & QSC, the bucket or tool must exert a given pressure on the ground.

In other words, buckets and tools cannot be removed while raised.

Q-Safe™ is engcon's standard quick coupler for excavators.

How it works

Q-Safe™ with QSC* locking system

Unhitch the bucket/tool

Activate the QSC* lock function, apply light pressure to the ground with the bucket/tool; disconnect the bucket/tool. If the Q-Safe™ loses contact with one of the bucket axles, the machine's slew function is locked. When both bucket axles are entirely disconnected, the slew lock can be lifted.

Connecting the bucket/tool

Activate the QSC* locking function, hook up the bucket/tool and lock. The slew function is again blocked during connection of the bucket/tool once the first axle reaches the Q-Safe™ quick coupler. Once the bucket/tool is properly locked, the slew lock can be lifted.

If the bucket/tool is not properly locked on both axles, the operator and people in the surroundings are alerted by audible and light warnings. The slew lock is also activated.

Once the bucket/tool is fully and correctly connected, the audible/light warning cease; the slew lock can now be lifted and the machine is ready to work with the bucket/tool safely and fully connected.

Read more about QSC lock control on pages 24-25.

QLM warning system with light and audible signals is standard equipment**

The tool must be in contact with the ground to activate the quick coupler lock. ***

* Find out more about QSC on pages 24 & 25

** Find out more about the QLM below.

*** The ground pressure function requires the bucket/tool to exert pressure on the ground before it can be unhitched. The function comes with the engcon Quick coupler Standard Control (QSC) locking system.



QLM | Q-Safe™ Light Module

The Q-Safe™ Light Module (QLM) is a system used together with Q-Safe™; unless both bucket axles are locked in their correct positions, it emits a visual and audible warning.

The rear pin lock also holds the front pin in its correct position thus eliminating the risk of accidents caused by swinging tools that are only connected to the front pin.

Hook safety classification complies with EN ISO 12100-1/A1:2009 and EN ISO 12100-2/A1:2009

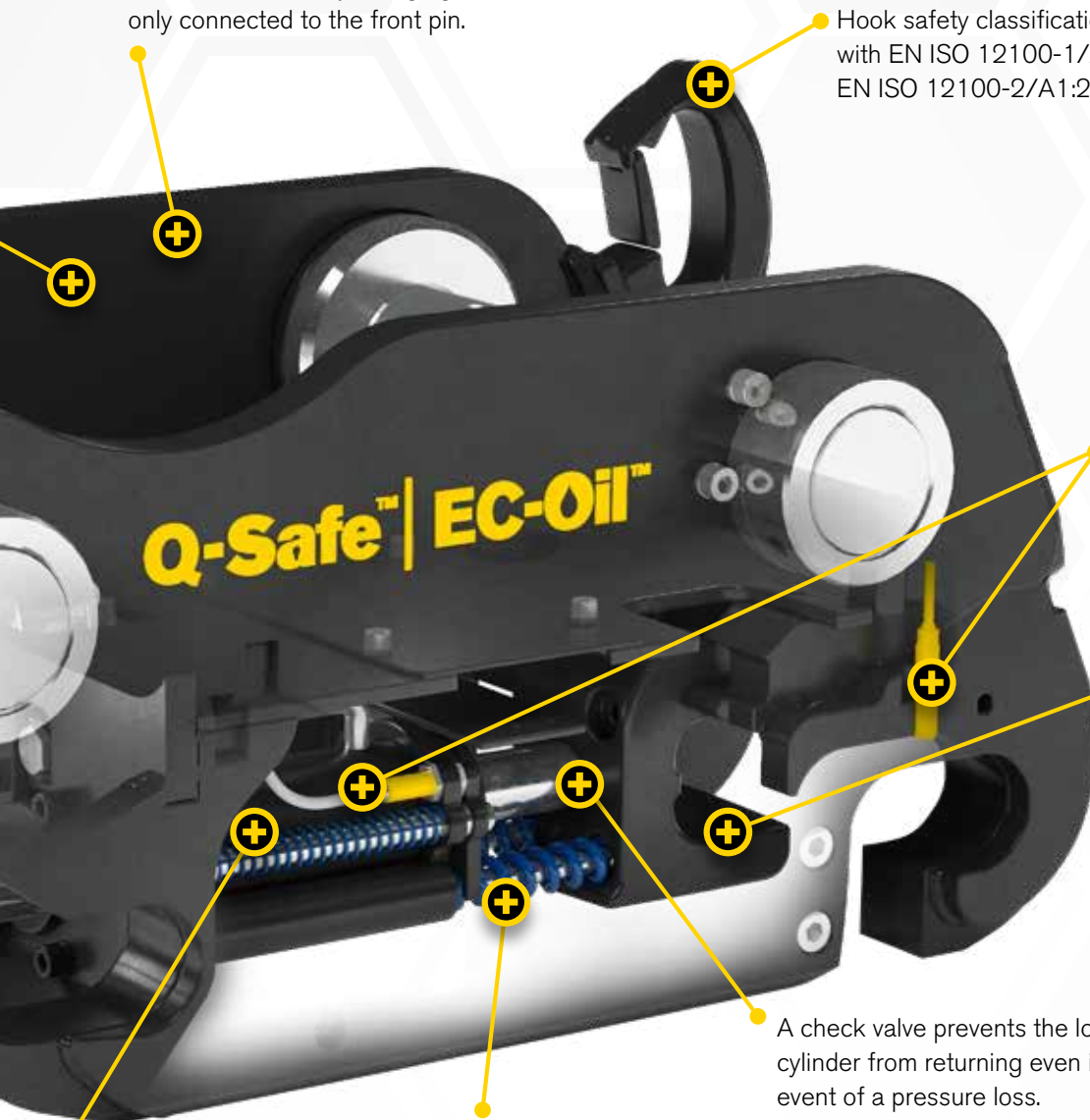
Double electronic sensors ensure contact with front and rear pins.

The unique shape of the lock bolt retains the tool in the quick coupler even if other safety functions should fail.

A check valve prevents the locking cylinder from returning even in the event of a pressure loss.

Harder springs retain locking capability even under pressure loss.

Q-Safe™ comes with EC-Oil™, engcon's automatic hydraulic connector system.



The QLM module is installed on the left side of the excavator's stick. Its cabling is integrated with the DC2 cabling.

If a control system other than the DC2 is used, run separate QLM cabling into the excavator cab.

Order the complete system with slew

limitation and the ground contact requirement for tool disconnection in consultation with the machine supplier.

Locking system | QSC

Standardized
coupler operation
improves safety

Today there are around 20 major excavator manufacturers, all of whom have well-functioning systems for operating quick couplers. However, the operation and location of the quick coupler lock buttons differ according to manufacturer and model.

Consequently, in situations where the excavator operator uses different machine types, there is a clear risk of incorrect operation. It's comparable to having different positions for brake and accelerator pedals depending on the make of a car.

Here at engcon, we're taking yet another step forward in our safety efforts. Our goal is to standardize and ensure safe operation of all quick couplers, for all excavators.

It's why we are introducing the Quick coupler Standard Control (QSC) lock system, a system that minimizes the risk of activating the wrong button or function. QSC a system that minimizes the risk of activating the wrong button or function. QSC is compatible with most makes of excavators, tiltrotators and quick couplers on the market. The system consists of a control panel with a switch to activate the excavator's quick coupler and another to activate the tiltrotator's quick coupler. All functions are brought together in a panel that is always located in the same position in the operator's cab, where it is easily recognizable regardless of the excavator's make or model.

QSC is part of our safety concept, the "Non Accident Generation", where we are creating a quick coupler operating standard. An operator switching from one excavator to another must be able to easily recognize

"It's comparable to having different positions for brake and accelerator pedals depending on the make of a car."



Lock function for machine coupler

the controls and thus minimize the risk of dangerous mistakes.

The quick coupler lock system can also control most quick coupler versions on the market, and fits and improves the function of fully hydraulic and automatic quick couplers. When using QSC, the quick coupler – regardless of make or model – gains an additional unique safety function in that it requires ground pressure on the bucket to release it. This means the bucket cannot be released in mid air, reducing the risk of accidents caused by falling buckets.

Together with the Q-Safe quick coupler, the QSC further increases safety by means of an audio visual alert system. Unless both bucket axles are correctly engaged, the system uses sound and light alerts while also activating the slew lock and boom lock functions.

The QSC and Q-Safe quick coupler combination means engcon delivers one of the world's safest quick coupler operating systems. This means the operator always knows what is happening and when it happens.



Automatic Quick Couplers

with maximum safety

QS45-QS80/QS45-ECO-QS80-ECO



Q-Safe™

Q-Safe™ – The safest quick coupler in the world!
For all excavators between 13,200-72,600 lbs
(6-33 metric ton)

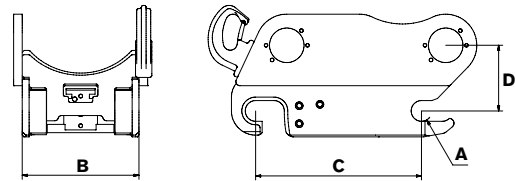
Q-Safe™ Features

- The EC-Oil automatic quick coupler system connects the tiltrotator & hydraulic tools without the operator needing to leave the cab.*
- Hydraulic locking with fourfold safety:
 1. Electronic sensors detect when both pins have contact
 2. A check valve prevents the hydraulic cylinder from opening even if a hose ruptures or there is a pressure drop
 3. Powerful, exterior springs keep the coupler locked even if the electronics and hydraulics fail.
 4. The unique design of the lock bolt provides additional safety as the bucket axle bottoms against the coupler side plates and cannot therefore drop out of position even if all three of the above steps should fail.
- The tool can only be removed when it is resting on the ground at a given pressure (with QSC). This eliminates the risk of dropped buckets.

Specifications

Model	QS45	QS50	QS60	QS70	QS80
Axle diameter A: (inch)	Ø1.8	Ø2.0	Ø2.4	Ø2.8	Ø3.1
Width B: (inch)	11.4	10.6	13.4	17.7	23.2
Length C: (inch)	16.9	16.9	18.9	23.6	26.4
Construction height D*: (inch)	5.5	5.5	6.7	7.5	10.6
Weight*: (lbs)	220	220	397	639	816
Recommended hydraulic pressure open/closed (psi)	3050-3630	3050-3630	3050-3630	3050-3630	3050-3630
Max hydraulic pressure: (psi)	5080	5080	5080	5080	5080
Base machine weight: (lbs)	13230-24250	13230-24250	26460-35270	35270-66140	55120-70550

*Depending on attachment



- Front and rear locks eliminate the risk of accidents caused by swinging tools
- Q-Safe is supplied as standard with external audible and visible warning signals to alert the surrounding area
- Play-free design with double contact surfaces compared to many other coupler systems
- Longer hooks (shark jaws) to make picking up tools safer and easier
- Welded high-strength steel
- Fits all excavators in the specified weight class independent of control system
- The hook is classified for safety in compliance with:
EN ISO 12100-1/A1:2009 and EN ISO 12100-2/A1:2009
- Q-Safe is also fitted as standard equipment under engcon tiltrotators with coupler sizes S45-S80.

* Read more on page 2

S-Quick coupler | S30, S40

- Can be supplied with hydraulic or mechanical locking
- Hydraulic locking for speedy attachment and tool changes straight from the cab
- Play-free connection
- Changeable for deep and shallow digging
- Robust, reliable and affordable
- Low installation dimensions.
- Low weight
- Welded, high-strength steel



EC-Oil™ Tool brackets

GS45-ECO, GS50-ECO, GS60-ECO,
GS70-ECO, GS80-ECO

Adapt your hydraulic tools for EC-Oil

For all excavators between 13,200-72,600 lbs (6-33 metric ton)

- Bucket/attachment brackets compatible with EC-Oil™ connection blocks
- Standard bolt pattern for engcon tools, or weldable bracket, that can be fabricated
- Possible to use one or two EC-Oil blocks per bracket
- Easy to adapt for all types of hydraulic tools
- Robust, reliable and affordable
- Constructed with high strength steel



Bolt-On Bracket with EC-Oil



Weldable bracket with EC-Oil

Specifications

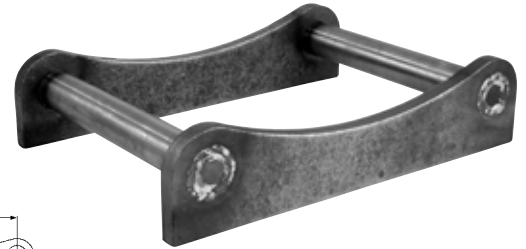
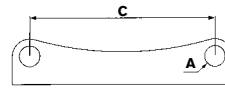
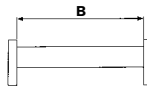
Model	GS45	GS50	GS60	GS70	GS80
Axle diameter A (inches):	Ø1.8	Ø2	Ø2.4	Ø2.8	Ø3.1
Width B (inches):	11.4	10.6	13.4	17.7	23.2
Length C (inches):	16.9	16.9	18.9	23.6	26.4
Suitable for engcon RF:	QS45/S45	QS50/S50	QS60/S60	QS70/S70	QS80/S80

Tool brackets

GS30–GS80, GS1–GS3

For all excavators between 2,200-72,600 lbs
(1-33 metric ton)

- Easy-to-modify buckets for engcon quick couplers
- Robust, reliable and affordable
- Welded, high-strength steel design



Specifications

Model	GS30/ 150	GS30/180	GS40/200	GS40/240	GS45	GS50	GS60	GS70	GS80
Axle diameter A (inches):	Ø1.2	Ø1.2	Ø1.6	Ø1.6	Ø1.8	Ø2	Ø2.4	Ø2.8	Ø3.1
Width B (inches):	5.9	7.1	7.9	9.4	11.4	10.6	13.4	17.7	23.2
Length C (inches):	7.9	9.1	11.8	11.8	16.9	16.9	18.9	23.6	26.4
Suitable for engcon RF:	QS30/S30	QS30/S30	QS40/S40	QS40/S40	QS45/S45	QS50/S50	QS60/S60	QS70/S70	QS80/S80



Specifications

Model	S30	S40
Axle diameter: (inch)	1.2	1.6
Width: (inch)	5.9	7.9
Length: (inch)	7.9	11.8
Construction height: (inch)*	4.3	4.3
Weight: (lbs)*	22	55
Recommended hydraulic pressure open/closed (psi)	3050/435-870	3050/435-870
Max hydraulic pressure: (psi)	3200	3200
Base machine weight: (lbs)	2200-4410	4410-13230

*Depending on attachment

Detachable grabber | GRD10 GRD20 GRD70

Grabber cassette Detachable (GRD)

engcon's new detachable grabber cassette is also retrofittable.

The grab cassette simply hooks onto the Q-Safe-D quick coupler, whereupon the grabber cassette is locked on and the hydraulics are connected with a single maneuver – a procedure that takes less than a minute. The grabber is angled 15 degrees to the tiltrotator, which gives a longer grab reach.

The GRD is available in three sizes:

GRD10, which fits quick couplers QSD45 and QSD50

GRD20 for QSD60 and QSM60 quick couplers

GRD70 for QSM70 quick couplers



engcon's detachable grab cassette comes in two different versions. GRD10Q, GRD20Q and GRD70Q quick locking & GRD10, GRD20 and GRD70 Manual. Both fit Q-Safe-D quick couplers.



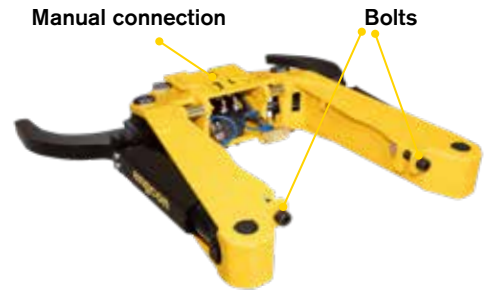
Quick locking



GRD10Q, GRD20Q, GRD70Q - Q=Quick

The grab cassette is locked and the hydraulics connected in a single movement with a simple procedure using a 1.3 inches box end wrench. This means attaching or detaching in less than a minute.

Manual connection

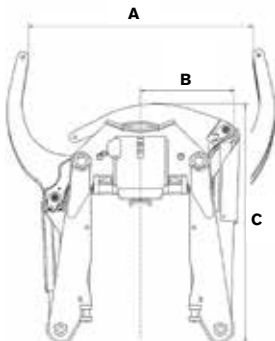


Bolts

GRD10, GRD20, GRD70 - Manual

The grab cassette is fastened to the back section of the quick coupler using nuts & bolts. The hydraulics are connected manually using hose connectors.

**Applies to GRD10Q, GRD20Q and GRD70Q*



Specifications

Model	GRD10	GRD20	GRD70
Widest grabber width A: (inch)	24	32.3	37.4
Width B: (inch)	10.6	14	16.1
Length C: (inch)	28.3	34.3	35.4
Clamping force, tip to tip, at 3050 psi: (lbs)	3307	4850	4850
Max load: (lbs)	3307	4409	4409
Weight: (lbs)*	240 / 229*	315 / 331*	359 / 373*
Max hydraulic pressure: (psi)	3200	3200	3200
Fits couplers:	QSD45, QSD50	QSD60, QSM60	QSM70

*GRDQ

Detachable sweeper

SWD 45 SWD60

Sweeper – engcon's SWD detachable sweeper
– can also be retrofitted.

Just like the GRD grabber cassette, the SWD sweeper can be retrofitted on the Q-Safe™ D quick coupler by fastening the single hook on the coupler's two suspension hooks and then locking the sweeper and connecting the hydraulics with a single hand maneuver – quick and easy. The SWD is operated by a heavy duty hydraulic motor and is raised or lowered by a hydraulic cylinder.

The SWD has a flexible design and can be adapted widthwise to precisely fit the job in hand – everything from cable sweeping to sweeping large areas that need cleaning. Reduces the need for manual labor and makes work safer. SWD is available in several widths and can be used with engcon's new Q-Safe Detachable quick coupler (QSD).



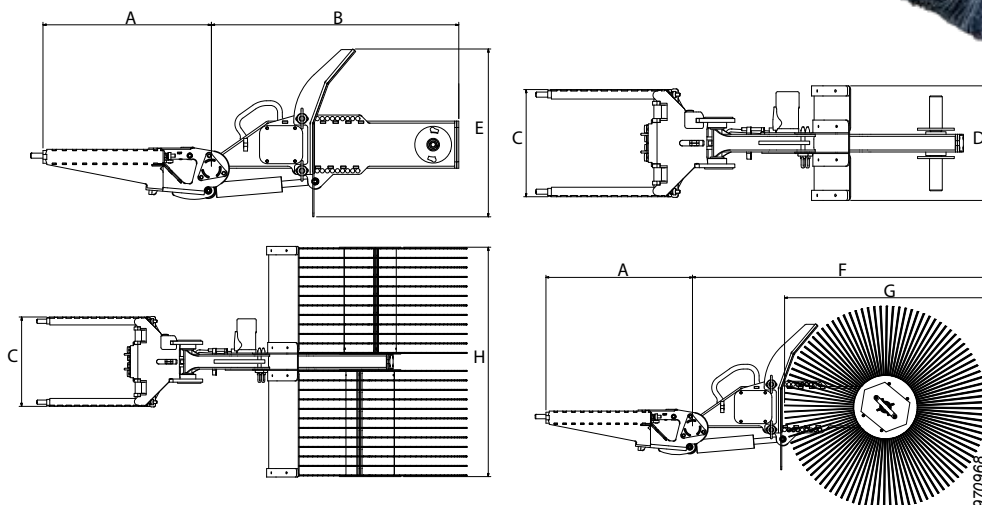
Specifications

Model	SWD45	SWD60
Length, cassette A: (inch)	23.1	26.2
Length, arm B: (inch)*	34.4	38.4
Width, cassette C: (inch)	14.3	16.7
Width, guard D: (inch)**	17.7, 43.3, 63	17.7, 43.3, 63
Height, guard E: (inch)	26	26
Max total length A+F (inch)*,**	59.1	78.7
Diameter, brush G: (inch)***	23.6, 27.6, 36	23.6, 27.6, 36
Width, brush H: (inch)	16.5, 43.3, 63	16.5, 43.3, 63
Maximum weight: (lbs)*,**	410	463
Oil flow min/max: (gal/min)	16	16
Fits couplers:	QSD45, QSD50	QSD60, QSM60

*In the standard version

**Depends on sweeper brush

***36 inch can only be used
with long arm (38.4 inch)



Integrated grabber | GR05-GR30

For all excavators between 7,260-72,600 lbs (3-33 metric ton)

- The grab arms are made from high-strength 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 tiltrotators/rotators EC204, EC206, EC209, EC214, EC219, EC226, EC233 and EC30
- 3-finger claws as standard
- Complies with European safety standards

GR20B Features:

- ▶ Grab width 820-950* mm depending on the quick coupler
- ▶ Stronger grabber guard
- ▶ Fixed counterhold
- ▶ Improved axle locks

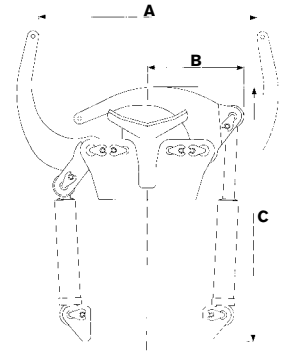
* S60GR20, QS60GR20 and S1GR20: 32.3 inches
S70GR20, QS70GR20 and S2GR20: 37.4 inches

Feature GR30 (S80 and S3): ▶ Grabber grasp up to 42.5 inches



Specifications

Model	GR05	GR10	GR20B	GR30*
Widest grabber width A: (inch)	13.8	24	32.3 - 37.4*	42.5
Width B: (inch)	7.9	10.6	13.8	17.3
Length C: (inch)	23.0	29.9	35.8	38.6
Clamping force, tip - tip, at 21 MPa: (lbs)	3646	3300	4925	4312
Max load: (lbs)	2205	3307	4409	4850
Weight: (lbs)*	110	154	187	326
Max hydraulic pressure: (psi)	3200	3200	3200	3200



* Depending on attachment

Integrated grabber | GR20R2

Integrated grabber for EC214 EC219 *

The new GR20R2 integrated grabber 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:

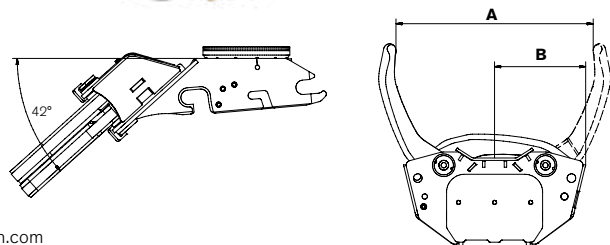
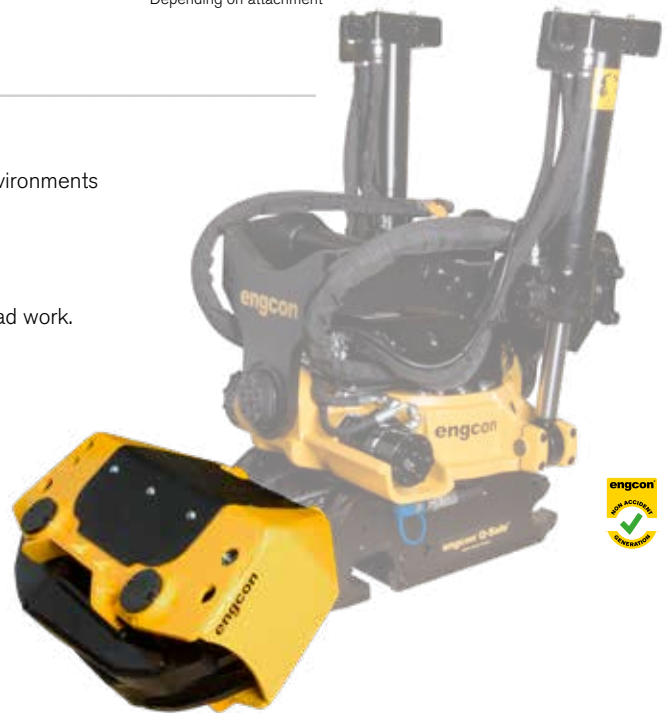
- Robust construction designed for demanding, heavy-duty use e.g. in railroad work.
- Angled down up to 42 degrees
- Big grab width – 32.3 inches
- Protected cylinders

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

Specifications

Model	GR20R2
Largest grip width A (inches):	32.3
Width B (inches):	15
Length C (inches):	Depending on coupler
Weight (lbs)*:	308
Grab force at 3046 psi (lbs):	3,850
Angled at 35-42° depending on the bracket	
Detachable	
Protected cylinders	

Note! The GR20R2 cannot be combined with all quick couplers on the market. Contact engcon for further information.



Rock and sorting grapples

SG03, SG06, SG12, SG19, SG26, SG33

For all excavators between 3,300-72,600 lbs (1,5-33 metric ton)

engcon's rock & sorting grapples in the SG series are suitable for everything from sorting and light demolition work, to where a powerful grapple is needed. Used in combination with the engcon tiltrotator, the grabs excel in tight space material handling, and they also come with the EC-Oil automatic oil connection system as standard equipment*

The advantages of SG grapples

- The EC-Oil automatic quick connection system connects the hydraulics without the operator having to leave the cab*
- The grapple's claws are fitted with a reversible cutting edge
- A load holding valve and pressure accumulator maintain gripping force for extended periods to ensure consistent and safe lifting
- Engineered to meet and exceed safety standards
- Expander bushings in major joints
- Bolt-on bracket / top hitch makes switching brackets easy.

Accessories:

Tooth kit for better grip

Closed sides to convert the grab into a clamshell bucket

*Applies to grabs with QS45-QS80 quick hitch top brackets.



With teeth
(accessory)



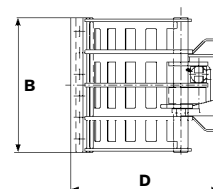
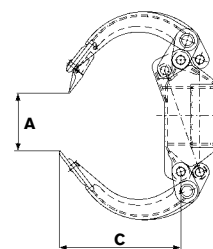
With closed sides
(accessory)

EC-Oil
STANDARD

Read more on page 2

Specifications

Model	SG03	SG06	SG12	SG19	SG26	SG33
Max grab width A: (inch)	29.5	43.7	65.4	70.5	78.3	101.4
Min grab width A: (inch)	0	0	0	0	0	0
Cutting width B: (inch)	15.7	19.9	28.1	33.9	33.9	46.1
Jaw length C: (inch)	19.3	18.1	26.8	31.1	34.3	46.5
Height D: (inch)	21.7	22.8	31.1	37.8	42.1	53.5
Gripping force: (lbf)	1281	1956	3372	4271	5620	10116
Max hydraulic pressure: (psi)	3200	3200	3200	3200	3200	3200
Weight: (lbs)*	240	395	935	1425	1665	-
Volume, with side plates: (gal)	11.1	21.9	58.1	88.8	111.0	245.7
Grab area: (inch ²)	4.7	6.7	13.4	16.5	20.5	33.5
Base machine weight: (lbs)	3310-6610	6610-13230	13230-26460	26460-35270	35270-48500	48500-70550
Recommended tiltrotator/rotator:	EC02	EC204 EC206	EC206 EC209 EC214	EC214 EC219	EC219 EC226	EC226 EC233



*Depending on attachment

Timber/combi grapple | TG25HD–TG55HD

Together with the tiltrotator, engcon's combi Timber Grapple Heavy Duty (TGHD) is the ultimate tool for round timber and pipe handling, and light sorting jobs. The grapples are reinforced with high-strength steel wear bars with 400 Brinell hardness and can be adapted to fit a large number of couplers.



Read more on page 2

Advantages:

- The EC-Oil automatic quick coupler system connects the hydraulics without the operator needing to leave the cab.
- Grapple arms in high-strength steel for maximum service life
- Grapple tips with 400 Brinell hardness wear bars for best durability
- A check valve integrated in the hydraulic cylinder and accumulators mounted directly on the cylinder without hoses, safely maintains the load even if a pressure drop should occur.
- Expander bolts in joints prevent unnecessary play
- Bolt-on bracket/mounting makes switching brackets easy
- Bolt-on bracket/mounting means dealers need keep fewer timber/combi grapples of the same size in stock.

Specifications

Model	TG25HD	TG28HD	TG42HD	TG55HD
Max grab width: (inch)	57.1	60.6	74.8	98.8
Max load: (lbs)	6610	11020	13230	22050
Height, fully open: (inch)	29.9	35	40.9	45.1
Height, fully closed: (inch)	20.7	25.9	29.6	37.2
Width: (inch)	18.1	23.4	26.7	31.6
Gripping force at 3,200 psi (lbf)	1529	2792	4586	7162
Max hydraulic pressure: (psi)	3200	3200	3200	3200
Weight: (lbs)	430	794	1312	2359
Grab area: (inch ²)	9.8	11	16.5	21.7
Recommended machine weight: (lbs)	8,820-19,840	19,840-30,860	26,450-41,890	41,890-57,320

Pallet fork | GH1000, GH1200, GHH1200, GHH1200L, GH1500, GHH1500

engcon's pallet forks/forklift frames – A robust and cleverly engineered design for best visibility. Tempered forks assure long service life.

NOTE! Always check which safety instructions apply for use of a pallet fork on the type of machine being used. A check valve must be fitted to the tiltrotator if it is to be used with a pallet fork.

engcon and EC233 tiltrotators are fitted with load-holding valves in the tilt cylinders as standard equipment.

- The EC-Oil automatic Quick Coupler system connects the hydraulics without the operator needing to leave the cab
- Operation of hydraulic pallet forks is done from within the cab
- Mechanical hydraulic pallet forks are held in the correct position with a robust latch and the position is adjusted manually
- Forged forks for maximum durability and service life

GH = mechanical fork widening,
GHH = hydraulic fork widening
GHH1200L = Hydraulic fork widening,
 Light version for lighter machines.
 Find out more on page 9.



Read more on page 2

Specifications

Model	GH1000	GH1200	GHH1200	GHH1200L	GHH1200L	GH1500	GHH1500
Width: (inch)	39.4	47.2	47.2	47.2	47.2	59.1	59.1
Blade: (inch)	3.9x1.6x47.2	4.9x1.8x47.2	4.9x1.8x47.2	3.9x1.6x47.2	4.9x1.8x47.2	4.9x2x59.1	4.9x2x59.1
Weight: (lbs)*	396	770	880	572	689	924	1,254

* Depending on bracket

Compactor | PP350, PP600, PP950

For all excavators between 13,200-72,600 lbs (6-33 metric ton)

- Easily adaptable for the EC-Oil automatic oil connector system and can thus be connected without the operator having to leave the cab.
- Compaction plate in hard-wearing steel
- Side plating for leveling-off filler material
- Open short ends to facilitate clearing the top of the plate
- Joined with rubber elements located 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 bracket
- Complete with flow control valve
- Complies with European safety standards
- Supplied as standard excluding bracket and machine hoses
- Tandem-connected weights



Read more on page 2



Specifications

Model	PP350	PP600	PP950
Compaction force (lbs):	7720	13,230	20,940
Compaction area: (inch ²)	16.5	22.8	35.4
Max hydraulic pressure: (psi)	3200	3200	3200
Rec hydraulic flow: (gal/min)	18.0	31.7	31.7
Max rec return hose pressure: (psi)	145	145	145
Weight excluding attachment point: (lbs)	860	1370	1980
Length: (inch)	35.04	41.34	50
Width: (inch)	24.41	28.35	35.43
Height: (inch)	17.72	20.47	23.62

Best in test!

engcon's PP600 compactor achieved the best result in an impartial test conducted by geologist Dr. H. Seeliger in Kassel, Germany. The compaction level was remarkable with 103.2% after two passes and 101.6% after six passes.

Compactor | PP3200

For all excavators between 13,200-35,200 lbs (6-16 metric ton)

- Easily adaptable for the EC-Oil automatic oil connector system and can thus be connected without the operator having to leave the cab.
- Low flow requirement (9.25 gallons) allows the PP3200 to be run directly off the extra connections on the tiltrotator
- Variable working width
- Specially adapted compactor pads
- Compaction plate in hard-wearing steel
- Side plating for leveling-off filler material
- Open short ends to facilitate clearing the top of the plate
- Joined with rubber elements located 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 bracket
- Complies with European safety standards
- Supplied as standard excluding bracket and machine hoses

Accessories: Extension plates, trenching blade, specially adapted compactor pads for e.g. packing in sheet-pilings.



Specifications

Model	PP3200
Compaction force (lbs):	7050
Compaction area: (inch ²)	15.7 - 22.0
Max hydraulic pressure: (psi)	3200
Rec hydraulic flow: (gal/min)	9.0
Max rec return hose pressure: (psi)	360
Weight excluding attachment point: (lbs)	1040
Length: (inch)	39.37
Width: (inch)	19.69 - 27.56
Height: (inch)	23.23



Read more on page 2



Sweeper | SR800-2000

engcon's sweepers – Make the most of what the excavator has to offer and open up previously undreamed-of possibilities in a wide range of speciality areas. Regardless of whether you'll be sweeping snow, sand, gravel or soil, this will soon become a favorite tool that you just cannot live without. In the winter, you can use it in areas such as crosswalks, pedestrian walkways, railroad points, cabin and container roofs, balcony roofs and more, where snow normally has to be cleared manually. In the summer, the brush can be used for sweeping road sand and gravel, brushing grassed areas, foundations, rocks and more. The only limit is your imagination. A hydraulic motor provides the power, and a geared chain drive enables brush rotation speed to be adjusted. The open design allows unsurpassed service-friendly access, and the standard polypropylene sweepers can be replaced quickly and easily. Easily adaptable for the EC-Oil automatic oil connector system and can thus be connected without the operator having to leave the cab.



Specifications

Model	SR800	SR1300	SR1600	SR1800	SR2000
Min hydraulic flow: (gal/min)	5.3	5.3	5.3	5.3	5.3
Max hydraulic flow: (gal/min)	15.9	15.9	15.9	15.9	15.9
Weight excluding attachment point: (lbs)	463	529	573	606	639
Width: (inch)	31.5	51.2	63	70.9	78.7
Height: (inch)	49.5	49.5	49.5	49.5	49.5
Length: (inch)	41.7	41.7	41.7	41.7	41.7



Read more on page 2



Grading beam | GRB1250-GRB3000

With engcon's grading beam, you can grade large areas quickly and efficiently.

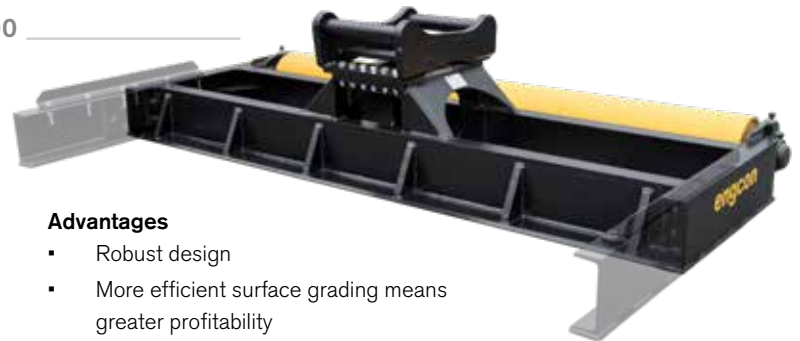
The grading beam is a smart, flexible solution as it has a bolt-on bracket/coupler with the same bolt pattern as other tools (e.g. rock and sorting grabs, compactors and rotating brushes) from engcon.

The side beams can be extended with bolt-on 19.69 inches extensions. This means that our dealers do not need to carry several different grading beams versions since a single model covers various configurations.

End-users and contractors can also get by with a single beam for several machines if they do not need to use more than one at a time.

What's more, engcon's grading beam has cutters on the leading edge and wear bars under the entire structure. This means a long service life, making the grading beam even more profitable. The journaled compactor roller can be raised and lowered to achieve the best setting for your particular needs.

engcon's grading beam comes in five different widths to cover almost any need for efficient grading.



Advantages

- Robust design
- More efficient surface grading means greater profitability
- Bolt-on mounting/bracket
- Cutters at the leading edge
- Wear bars under the entire structure
- Extendable side beams
- Journaled compactor roller
- Compactor roller can be raised and lowered



NOTE: while engcon's grading beam is even more efficient in combination with a tiltrotator, it is then important to consider the loads that the tiltrotator will be subjected to. Use the grading beam for its intended purpose – grading. Large quantities of material can be moved quickly and efficiently with engcon's bucket range.

Specifications

Model	GRB1250	GRB1500L	GRB1500	GRB 2000	GRB 2500	GRB 3000
Width (inches):	49.2	59.1	59.1	78.7	98.4	118.1
Depth (without extensions) (inches):	37.9	37.9	39.4	39.4	39.4	39.4
Height (without top bracket) (inches):	10.8	10.8	15.2	15.2	15.2	15.2
Diameter, roll (inches):	7	7	9.6	9.6	9.6	9.6
Weight excl. adapter (lbs):	429	513	673	1,060	1,239	1,419



Tools to take on the toughest of tasks

engcon offers a wide range of mechanical tools, adapted to your specific needs. The tools are manufactured in high-quality steel and are designed to provide the greatest flexibility and crack resistance. The wear bars and cutters 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', which makes it impossible to 'cut corners' when moving tools e.g. by hooking a bucket tooth onto it. This entails an obvious risk that the buckets will slide off the hook of the bucket carrying them.

Grading bucket | GB01-GB29



For all excavators between 3,300-72,600 lbs (1.5-33 metric ton)

engcon's grading bucket – optimized in collaboration with experienced contractors for use together with the tiltrotator. Chamfered corners from the baseplate all the way up to the top plate to avoid colliding with building walls and other objects that can potentially be damaged by the rotating bucket. Tapered for easier filling and an adapted angle of 16 degrees between the bracket on the bottom to make rotating the bucket easier without losing any material.



engcon grading bucket features

- 1 Chamfered corners to avoid collisions
- 2 Bucket top plate angle adapted for tiltrotator
- 3 Hardox reinforcements on other wear surfaces
- 4 Tapered for easier filling and better release
- 5 Wear bars and cutters – hardness 500 Brinell

Specifications

Model	GB01	GB02	GB02	GB02	GB03	GB04	GB04	GB05	GB05	GB06	GB06	GB08	GB08	GB08	GB08	GB11	GB11	GB11
Volume (y³):	0.07	0.12	0.17	0.17	0.20	0.26	0.26	0.33	0.33	0.39	0.39	0.48	0.48	0.52	0.52	0.59	0.65	0.65
Width (inches):	31.5	35.4	35.4	35.4	43.3	39.4	39.4	47.2	47.2	47.2	47.2	51.2	51.2	55.1	55.1	55.1	55.1	55.1
Weight (lbs):	132	165	176	187	242	297	308	319	341	341	352	572	572	561	583	704	814	814
Top bracket:	S30	S30	S30	S40	S40	S40	S45	S40	S45	S40	S45	S45	S50	S40	S50	S45	S45	S50

Model	GB13	GB13	GB14	GB15	GB15	GB17	GB17	GB17	GB20	GB20	GB20	GB20	GB22	GB24	GB24	GB29	GB29	GB29
Volume (y³):	0.78	0.78	0.85	0.98	0.98	1.18	1.18	1.18	1.44	1.44	1.44	1.44	1.64	1.83	1.83	2.09	2.09	2.09
Width (inches):	63	63	63	63	63	66.9	66.9	66.9	66.9	66.9	66.9	66.9	74.8	78.7	78.7	78.7	78.7	78.7
Weight (lbs):	990	1,078	1,012	1,452	1,518	1,540	1,628	1,606	2,068	2,156	2,134	2,156	2,332	2,530	2,530	3,212	3,278	3,212
Top bracket:	S60	S1	S60	S60	S1	S60	S70	S1	S60	S70	S1	S2	S70	S70	S2	S70	S80	S2

Grabber-adapted bucket series

A new grabber-adapted bucket series has been developed in parallel with the GRD, the detachable grab, where the rear of the bucket is designed with a recess that aligns with the grab's counterhold and consequently functions as an extended support for the item being gripped, such as a pole or pipe.



Sorting bucket | SB02-SB29

The engcon series of sorting buckets are designed for quick, simple sorting. Sorting buckets require no hydraulics; they are made from high quality steel. Cutters and wear bars have a hardness of 500 Brinell – the same high quality as every other engcon bucket. All to provide maximum efficiency and a long service life.



Specifications

Model	SB02	SB02	SB02	SB04	SB06	SB06	SB08	SB08	SB11	SB11	SB14	SB15	SB17	SB20	SB24	SB29
Volume: (y³)	0.12	0.17	0.17	0.26	0.39	0.39	0.48	0.48	0.65	0.65	0.85	0.98	1.18	1.44	1.83	2.09
Width: (inches)	35.4	35.4	35.4	39.4	47.2	47.2	51.2	51.2	55.1	55.1	63	63	66.9	66.9	78.7	78.7
Diameter: (inches)	0.9	0.9	0.9	0.9	0.9	0.9	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8
Gap: (inches)	1.2	1.6	1.6	2	2	2	2	2	2	2	2	2.6	2.8	2.8	2.8	2.8
Weight: (lbs)	176	189	200	317	365	389	642	649	704	711	972	1,382	1,533	2,024	2,301	2,790
Top bracket:	S30	S30	S40	S40	S40	S45	S45	S50	S45	S50	S60	S60	S60	S70	S70	S70

Cable bucket | CB01–CB29

For all excavators between 3,300-72,600 lbs (1.5-33 metric ton)

engcon's cable bucket – developed for precision excavation with minimal width for e.g. cables or other services requiring narrow trenches. Its deep profile means better accessibility beneath intersecting cables and pipes and also allows deep trenching without any need for the tiltrotator to go below surface level.

engcon's cable buckets are available in two models – Standard and tapered (C)

Standard is the conventional type with straight side plates for excavating ditches with vertical sides.

The tapered model has a narrower blade than the standard cable bucket but with the same width top, producing a narrower trench bottom with slightly sloping sides.

engcon's cable buckets are made from high-quality steel. As with other engcon buckets, the cutters and other exposed wear surfaces have a hardness of 500 Brinell.

A factory-installed tooth kit is available as an optional extra.



Tooth kit, type Cat

Blade teeth provide smooth ditch bottoms



Standard

Conical

Specifications

Model	CB01	CB02	CB03	CB03	CB05	CB05	CB05	CB08	CB08	CB08	CB10	CB10C
Volume (y³):	0.05	0.08	0.12	0.12	0.17	0.17	0.17	0.20	0.20	0.20	0.21	0.17
Width (inches):	9.4	11.4	11.4	11.4	13.4	13.4	13.4	15.7	15.7	15.7	18.1	11.8
Weight (lbs):	55	77	121	121	154	187	187	183	209	209	352	374
Top bracket:	S30	S30	S30	S40	S40	S45	S50	S40	S45	S50	S50	S50

Model	CB15	CB15C	CB15	CB15C	CB20	CB20	CB20	CB25	CB25	CB29	CB29	CB29
Volume (y³):	0.46	0.46	0.46	0.46	0.52	0.52	0.52	0.72	0.72	1.05	1.05	1.05
Width (inches):	22	11.8	22	11.8	26	26	26	23.6	23.6	27.6	27.6	27.6
Weight (lbs):	638	561	704	627	704	792	792	1,298	1,353	1,637	1,709	1,756
Top bracket:	S60	S60	S1	S1	S60	S70	S1	S70	S80	S70	S80	S2

Sorting bucket | SKB02–SKB29

The SKB sorting bucket is designed to more easily get beneath the material intended for sorting. It has a somewhat narrower shape than the engcon SB sorting bucket and its long base and low side panels make it easier to get beneath e.g. asphalt or other material intended for sorting. The base ribs run along the length of the bucket, allowing material to slide easily in and out.

The SKB sorting bucket requires no hydraulics and is thus ideal for simple sorting where e.g. finer material is required for backfill or some other use. The cutters, lower side plates and ribs are made of high-strength wear bar with a hardness of up to 500 Brinell, thus guaranteeing maximum efficiency and long service life.

Specifications

Model	SKB02	SKB04	SKB06	SKB09	SKB14	SKB17	SKB23	SKB29
Volume: (y³)	0.09	0.22	0.29	0.52	0.81	1.11	1.7	2.03
Width: (inches)	23.6	23.6	31.5	39.4	51.2	51.2	59.1	59.1
Gap: (inches)	1.7	1.6	1.9	2	2.4	2.4	2.4	2.4
Weight: (lbs)	108	238	365	640	1,091	1,329	2,358	2,708
Top bracket:	S30/180	S40	S45	S45	S60	S60	S70	S70



Water/Drainage bucket | TB07-TB21



For all excavators between 17,600-46,200 lbs (8-21 metric ton)

engcon's water & sewerage bucket – specially designed for excavating water and sewerage channels, and other utility tasks calling for a deep-digging bucket with a somewhat longer baseplate where a cutter without teeth is required. Like the other buckets in engcon's range, the water and drainage bucket is reinforced with Hardox at the most vulnerable points.

Specifications

Model	TB07	TB07	TB07	TB09	TB12	TB12	TB14	TB14	TB14	TB14	TB16	TB16	TB18	TB21
Volume (y³):	0.33	0.33	0.33	0.46	0.65	0.65	0.78	0.78	0.85	0.85	0.92	0.92	1.18	1.44
Width (inches):	23.6	23.6	23.6	27.6	31.5	31.5	31.5	31.5	32.7	32.7	35.4	35.4	35.4	43.3
Weight (lbs):	444	469	471	550	715	748	1,122	1,144	1,155	1,144	1,210	1,210	1,650	2,365
Top bracket:	S40	S45	S50	S50	S50	S60	S60	S1	S60	S1	S60	S70	S70	S70

Deep-digging bucket | DB01-DB32

For all excavators between 3,300-72,600 lbs (1.5-33 metric ton)

engcon deep-digging bucket – Robust design for tough jobs. A favorite for anyone needing to excavate and dig in difficult conditions where fast penetration and easy filling are priorities, e.g. in trenching and other soil removal requiring capacity.

On request, the bucket can be fitted with the following accessories:

- Tooth kit*
- Tooth cover
- Blade teeth

* When selecting a tooth kit, engcon buckets are fitted with the Cat J tooth system. For other tooth systems, check availability with engcon



Specifications

Model	DB01	DB02	DB02	DB02	DB03	DB05	DB06	DB06	DB07	DB07	DB09	DB09	DB11	DB11	DB11	DB12	DB12	DB12
Volume (y³):	0.07	0.09	0.12	0.12	0.16	0.21	0.26	0.26	0.33	0.33	0.46	0.46	0.52	0.52	0.52	0.65	0.65	0.65
Width (inches):	15.7	17.7	21.7	21.7	21.7	23.6	23.6	23.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	31.5	31.5	31.5
Weight (lbs):	77	110	121	132	165	220	275	308	462	473	506	517	616	627	660	704	704	726
Top bracket:	S30	S30	S30	S40	S40	S40	S40	S45	S45	S50	S45	S50	S45	S50	S60	S45	S50	S60

Model	DB13	DB13	DB14	DB14	DB16	DB16	DB18	DB18	DB18	DB21	DB21	DB23	DB23	DB26	DB26	DB26	DB29	DB29	DB32
Volume (y³):	0.78	0.78	0.85	0.85	0.98	0.98	1.18	1.18	1.18	1.44	1.44	1.64	1.64	1.83	1.83	1.83	2.09	2.09	2.35
Width (inches):	33.5	33.5	35.4	35.4	39.4	39.4	39.4	39.4	39.4	43.3	43.3	47.2	47.2	51.2	51.2	51.2	57.1	57.1	66.9
Weight (lbs):	1,100	1,254	1,144	1,298	1,320	1,386	1,496	1,573	1,562	2,068	2,024	2,530	2,530	2,926	2,970	2,904	3,168	3,190	3,784
Top bracket:	S60	S1	S60	S1	S60	S1	S60	S70	S1	S70	S1	S70	S2	S70	S80	S2	S70	S2	S80

Asphalt cutter | TC02-TC20



For all excavators between 7,260-72,600 lbs
(3-33 metric ton)

engcon's asphalt cutter – asphalt cutters from engcon allow you to make precision cuts and avoid higher costs through asphalt dug up unnecessarily. Can also be used for accurate cuts on grass surfaces and other locations where precision is called for.

Specifications

Model	TC02	TC02	TC05	TC10	TC10	TC15	TC20	TC20	TC20
Diameter (inches):	Ø14.6	Ø14.6	Ø14.6	Ø18.5	Ø18.5	Ø18.5	Ø18.5	Ø18.5	Ø18.5
Cutting depth (inches):	3.9	3.9	3.9	5.9	5.9	5.9	5.9	5.9	5.9
Weight (lbs):	64	66	88	121	132	154	198	242	440
Top bracket:	S30/150	S30/180	S40	S45	S50	S60	S70	S80	S1

Ripper | R5-R30

For all excavators between 3,300-72,600 lbs
(1.5-33 metric ton)

engcon's ripper – rippers from engcon have no problem coping with hard, frozen ground. The ripper, aka "ground frost hook", is optimized for the best ripping ability and breakout torque in hard material.



Specifications

Model	R5	R5	R10	R10	R15	R20	R20	R20	R30	R30	R30
Height (inches):	23.6	23.6	27.6	27.6	35.4	47.2	47.2	47.2	55.1	55.1	55.1
Weight (lbs):	110	143	242	242	374	814	902	858	1,496	1,584	1,518
Top bracket:	S30	S40	S45	S50	S60	S60	S70	S1	S70	S80	S2



Optional extra

for a more convenient
working day

MIG2

Enjoy your work with the very best of ergonomics and functionality



engcon's MIG2 joystick for excavators combines maximum ergonomics with functionality. The joystick was developed for without compromising on requirements for increased safety and more control functions.

MIG2 was designed in collaboration with contractors and a company specializing in industrial design. The lever can be fitted with three rollers and seven buttons, providing twice the number of buttons and rollers with two levers. The operator is therefore able to work

at maximum efficiency while also sparing the body strenuous movements and stressful working positions.

The joystick has an integrated hand support for the wrist to rest on without affecting the excavator movements. The hand rest is flexible and can be adjusted to suit different hand sizes.

MIG2 also provides the operator with new methods of operation. The joystick rollers are designed for the thumb, index and middle fingers – something that's unique to engcon.

This allows operators to use all six rollers simultaneously if necessary.

DC2 | Proportional control system with remote support

Our DC2 control system meets the high standards demanded of all component parts such as hydraulics, electronics and software. Together with engcon's tiltrotators and Q-Safe™, the DC2 is creating a safer working environment. DC2 offers the option of track and wheel steering as well as boom slew. A smartphone app allows remote support as a complement to PC and USB cable connection. The product complies with safety standard ISO 13849-1.



Advantages:

- DC2 complies with the new international machine safety standard SS-EN ISO 13849-1
- Quick installation as all wiring uses connectors
- The MicroConf PC software allows you to make fine adjustments and instantly follow the effect of changes made while the tiltrotator is in use
- With add-on control levers there is no need to replace the machine controls
- The system makes a back-up of all the settings from the cab module to the unit's module
- Display for alarm and for making certain settings
- Double feeder function
- Robust design increases operational safety
- Available as an optional extra or as a retro-fit
- Option of track control, wheel steering and boom slew
- Settings via Bluetooth and smartphone as an alternative to PC and USB cables
- Control with up to six rollers
- Compatible with most machines on the market
- Ability to create adapted tool programs





ePS | engcon Positioning System



engcon is now taking one step further into the future by adapting its products to the latest technology with excavator guidance systems/machine sensors.

ePS is optimized for engcon's smart DC2 control systems where the cabling for the ePS is integrated with the cabling for DC2 but is also "open", which means the ePS also works together with engcon's other control systems and those of other makes.

Conditions

The technology is based on signals from the ePS to the excavator guidance system used by the customer on his excavator. The aim is to enable as many manufacturers' excavator guidance systems as possible to be able to communicate with the ePS.

Advantages

Together with the selected excavator guidance system, ePS reduces the need for a 'conventional' setup, and the driver can see the exact excavation area via the machine control system's display in the cab. This control, which ensures the exact right

amount of material is excavated, provides many advantages:

- + **Reduced job time**
- + **Reduced fuel consumption**
- + **Reduced wear on machines and tools**
- + **Saves time for other units, such as trucks/ dumpers that haul away the excavation material.**
- + **Adapted to the DC2 control system, but possible to mount on other control systems**
- + **Fully independent of the control system make and model via own cabling (if not DC2)**
- + **Can be ordered with, or retrofitted, to all generation 2 tiltrotators from EC209 upwards ***

*Certain modification required on the EC30

engcon supplies the rotation sensor and the excavator guidance system supplier supplies the tilt sensor.

Auto-tilt and auto-rotation functions can also be obtained with the combination ePS and certain makes of excavators and excavator guidance systems. Contact your excavator guidance system supplier for further information.



New functions for your excavator – new jobs for your company

Do you want to work more efficiently and identify new business opportunities?
Tiltrotators and tools produced by the world's leading
manufacturer turn excavation into a fine art.

With System engcon and EC-Oil you can quickly change tasks and increase
both degree of usage and profitability of your excavator or backhoe loaders.
System engcon products are compatible with one another and turn
your excavator into a multi-tool for all kinds of tasks.

Dealers:

engcon[®]

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