



STEELWRIST

EARTHMOVING EFFICIENCY





COMMITMENT TO EFFICIENCY

Responsiveness, Simplicity and Speed

Steelwrist is today a global manufacturer of tiltrotators, quick couplers and work tools for excavators with headquarters in Sweden. Since the foundation in 2005, Steelwrist has been one of the fastest growing industrial companies in the industry.

Our core values of Responsiveness, Simplicity and Speed guide the way for how we work with customers, dealers, suppliers and employees. We listen to and learn together with our customers, we are easy to work with and we focus on delivering value with speed – everything being at the core of our company culture.

Steelwrist's goal is to be the “best in the world to develop, manufacture and sell equipment that increases efficiency of excavators” and a determined focus on robust and modern products, combined with fast service are appreciated by an increasing number of customers world wide.

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The key to unlock your excavator efficiency

Enablers and Automation

The core of the Steelwrist product offering includes quick couplers, tilt couplers and tiltrotators that together with the control system make up the foundation for higher excavator efficiency.

Regardless if your need is a safe and robust quick coupler, a more advanced tilt coupler, or the most efficient tiltrotator, we have the solution for you.

We introduced the patented Front Pin Lock technology already in 2012 which pushed the industry to focus more on safe quick couplers. Since then we have introduced solutions that increase safety even further.

Our SQ technology will convert the quick couplers and tiltrotators to automatic quick coupler systems connecting both hydraulics and electrical signals in one movement. No need to get out of the cabin for any tool change.

Work Tools

A job needs a work tool and a work tool needs an excavator - not the other way around. That's the starting point when we think about how to increase your excavator efficiency.

Steelwrist work tools include buckets such as grading-, digging-, cable-, v-ditch-, sorting-, skeleton- and utility buckets as well as rippers, pallet forks, asphalt cutters and grading beams.

Our powered work tools include a range of multi-, sorting- and finger grapples as well as sweepers and compactors.

Automation

Control Systems & Synergy Features



ENABLERS

Tiltrotators



Tilt couplers



Quick couplers



WORK TOOLS

Powered work tools



Work tools





STEELWRIST PEOPLE AND SUSTAINABILITY

Sustainability – a continuous mindset

Steelwrist has from its inception focused on excavator efficiency, which is also our biggest contribution to a more sustainable and environmentally friendly world. We know that an excavator equipped with Steelwrist's products is about 20 to 30 percent more efficient than a traditional excavator and we know that the result of this is less fuel consumption, fewer heavy machines needed on job sites, less heavy transportations and increased job safety as many potentially dangerous task now can be carried out by the excavator operator.

The fact that the job can be done faster and that excavators become more versatile eventually result in less environmental impact apart from increasing profitability for the owner, thus allowing for more leeway for our customer to make environmentally friendly investments.

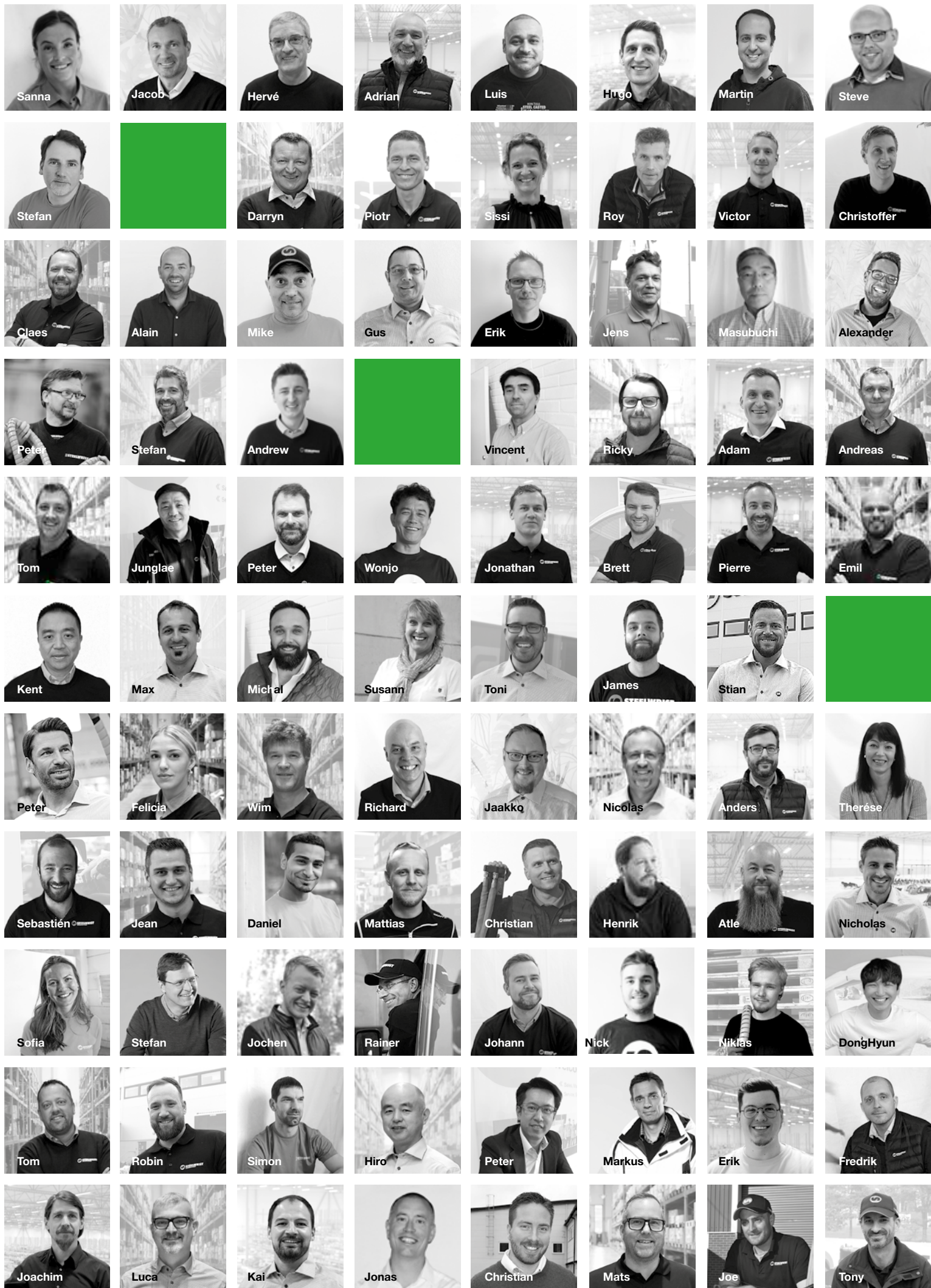
Apart from our product impact, Steelwrist also work hard to reduce the environmental footprint from our operations.

During 2021 we produced our first Sustainability Report and 2022 will be another milestone year as we are joining the Science Based Target Initiative, SBTi, and the zero-carbon transition.

The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). Within SBTi we will set an ambitious target for emission reduction in order to fight climate change.

We cannot do everything, but with a continuous mindset we can make sure we pull our own weight in this very important job ahead.







STEELWRIST SQ AUTO CONNECTION SYSTEM

Changing powered work tools in seconds

The demand for productivity is constantly rising and in some applications the need for quick tool changes is almost continuous. With Steelwrist SQ technology you change between hydraulic powered work tools as well as mechanical work tools in only seconds – all without leaving the cab! In 2017 we introduced our patented Qplus™ technology which radically changes the “inside” of the hydraulic couplings. In 2022 we are updating the Qplus™ technology to allow for even higher flows.

Open standard

We believe in open standard interfaces, so the SQ system is designed to be able to connect to other brands using the same type of oil connection system.

Steelwrist Qplus™

is the label we have put on all the improvements we have developed compared to competitor solutions. Higher flow, more uptime and improved serviceability are the main benefits for the operator.

Qplus™ - Higher flow!

With Steelwrist Qplus™ the flow area measure up to 37 percent more compared to competitor products (depending on coupling size).

Qplus™ - More uptime!

Steelwrist Qplus™ sealing technology is completely new and significantly more durable compared to competitor products. This will give you more hours in operation before sealings have to be changed.

Qplus™ - Improved serviceability!

Changing seals in Steelwrist Qplus™ couplings is done fast and easy without need for proprietary and complicated tools.

STEELWRIST QUICK COUPLERS

With or without integrated oil couplings

Customers are increasingly demanding safer coupler solutions - all over the world. At the same time legislators are raising the bar for what is considered "safe".

Luckily accidents are relatively rare but it is still a problem. When we launched the Front Pin Lock technology in 2012 we wanted operator and ground personnel to feel safe during work tool changes, as the operator could see when the work tool is in a safe position.

Thanks to that we are not sensor dependant our solutions works equally well with all types of excavators regardless if they are small, large, new or used.

Today, with thousands of couplers in the field, the result has been a higher safety level and a robust solution cast in steel.

With Steelwrist entrance into the demolition segment the Front Pin Lock was upgraded to a second generation in order to support the heavy demolition work tools, and we are continuously introducing solutions that increase safety even further.



S and SQ Couplers

- ✓ Steel casted
- ✓ Upgradeable from S to SQ
- ✓ Locked front pin - maintains the work tool in a safe position
- ✓ Best in class hydraulic flow characteristics
- ✓ EN474, ISO13031 and SUVA compliant
- ✓ Expander machine pins
- ✓ Positive lock indicator – green indication when the work tool is in a safe position
- ✓ Negative lock indicator – the red indicates when the coupler is open



Machine Weight	Machine Quick Coupler	Building Height	Weight from	Max Oil Couplings
SYMMETRICAL				
0–2 ton	S30*	82 mm	15 kg	–
2–6 ton	S40*	95–125 mm	30 kg	–
5–12 ton	S45	120 mm	70 kg	–
5–12 ton	S50	130 mm	70 kg	–
12–20 ton	S60	150–175 mm	135 kg	–
18–33 ton	S70	175–200 mm	250 kg	–
25–43 ton	S80	230 mm	358 kg	–
40–70 ton	S90	265 mm	700 kg	–
SYMMETRICAL FULLY AUTOMATIC				
5–13 ton	SQ50	130–135 mm	100 kg	5
12–20 ton	SQ60-4	135–170 mm	135 kg	4
12–20 ton	SQ60-5	135–170 mm	135 kg	5
14–22 ton	SQ65	160 mm	190 kg	5
18–33 ton	SQ70	175–200 mm	245 kg	5
18–33 ton	SQ70/55	175–200 mm	310 kg	6
25–43 ton	SQ80	230 mm	430 kg	6
40–75 ton	SQ90	265 mm	750 kg	9

* S30 and S40 in mechanical and hydraulic locking

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STEELWRIST TILTROTATORS

**The most compact and optimized
tiltrotator on the market**



Our core values are responsiveness, speed and simplicity. This coupled with a rigorous attention to detail has allowed us to take the leading technology role within the business.

SQ Technology

All tiltrotators from X12 and upwards can be equipped with our SQ fully automatic technology. SQ on the top side (upper coupler) of the tiltrotator for rapid change between tiltrotator and other work tools.

SQ on the bottom side (attachment coupler) of the tiltrotator will allow for rapid change between hydraulic powered work tools, or why not sandwich with SQ on both top and bottom.

Machine Weight	Tiltrotators	Building Height	Weight from
0–2 ton	X02	260 mm	75 kg
2–4 ton	X04	343 mm	115 kg
4–6 ton	X06	343 mm	135 kg
5–7 ton	X07	396 mm	195 kg
7–12 ton	X12	425 mm	285 kg
10–14 ton	X14	432 mm	380 kg
12–16 ton	X18	458 mm	400 kg
16–20 ton	X20	508 mm	445 kg
18–26 ton	X26	536 mm	570 kg
25–33 ton	X32	625 mm	840 kg

High Flow Hydraulics and rotation sensors

Steelwrist high flow swivel is raising the bar for compact high flow hydraulics. This will allow you to use powered work tools like never before or just your tiltrotator in a more fuel efficient way. The high flow swivel can also include an electrical connection that can control valves on a work tool below the tiltrotator. During 2022 a new Absolute Rotation sensor is introduced in order to give more exact data to Machine Control Systems. Central lubrication can also be automatically connected to a work tool below the tiltrotator.

The Gripper

An integrated gripper is an amazing tool that increases your productivity even further. The gripper opens widely, closes almost entirely, has robust cylinder covers and does not interfere with excavation. Of course, it can be retrofitted.



Tiltrotators

- ✓ High 45° tilt angle
- ✓ Direct fit or Sandwich
- ✓ Steel casted
- ✓ Vertical tilt cylinders that allow digging in narrow trenches
- ✓ Lowest building height in the market
- ✓ Robust gripper cylinder covers
- ✓ Gripper as option
- ✓ Grease lubrication for longer life time and connection to central lubrication
- ✓ Coupler with Front Pin Lock or Front Pin Hook for safe tool changes
- ✓ High flow hydraulics
- ✓ Load holding valves
- ✓ Absolute Rotation Sensor

STEELWRIST TILT COUPLERS

When a robust tilt function is enough

Tilt Coupler

The Steelwrist tilt coupler is a combination between a robust tilt motor and the patented Front Pin Lock technology or Front Pin Hook from Steelwrist.

With the Steelwrist tilt coupler you will get a safe quick coupler solution when you just need the tilt function and not the full blown tiltrotator functionality.

The Steelwrist tilt coupler is based on the steel casted coupler as well as the robust direct fit top with expander pins.

TCX

The TCX - a tilt function for the smallest excavators. Available as Direct mounted with S30 coupler, both manual snap-on or hydraulic.



Tilt Couplers

- ✓ Front Pin Lock or Front Pin Hook coupler for safe work tool changes
- ✓ Hose free internal channels to locking cylinder
- ✓ Large contact surfaces to work tool thanks to steel casting
- ✓ Expander pins
- ✓ Up to 2x90° tilt angle
- ✓ Overload protection with cross-over valves



Machine Weight	Tilt Coupler/ TCX	Tilt Angle	Building Height	Weight from
0-2 ton	TCXS30	±30°	160 mm	28 kg
2-6 ton	TC050/S40	±90°	348 mm	95 kg
5-7 ton	TC070/S40	±90°	380 mm	145 kg
5-12 ton	TC100/S45	±90°	446 mm	210 kg
5-12 ton	TC100/S50	±90°	446 mm	210 kg
12-20 ton	TC180/S50	±60°	495 mm	360 kg
12-20 ton	TC180/S60	±60°	495 mm	380 kg
18-24 ton	TC240/S70	±60°	600 mm	620 kg
18-24 ton	TC240/SQ70	±60°	600 mm	650 kg

STEELWRIST SQ ADAPTORS

Connecting work tools efficiently

Connecting the tiltrotator or work tools in an efficient way is always a good idea. Regardless if you are looking to safeguard proper maintenance by connecting to a central lubrication system, or if you are chasing seconds when changing work tools we have the solution that you need.

SQ adaptors

The main reason to go for SQ couplers or a tiltrotator with SQ bottom is when the work requires many work tool changes. Regardless if you need an adaptor plate or a weld on bracket we have the cost effective brackets that you need.

All male couplings in the SQ adaptors includes the Qplus™ technology giving your work tool higher flow capabilities and more uptime. Our SQ adaptors build on the Symmetrical (S-type) standard with the addition of oil couplings. Steelwrist SQ adaptors therefore work perfectly with other manufacturers having the same dimensions and positions.



Weld on S-type adaptors



Weld on SQ adaptors - high



Weld on SQ adaptors - low



SQ adaptor plate with manifold



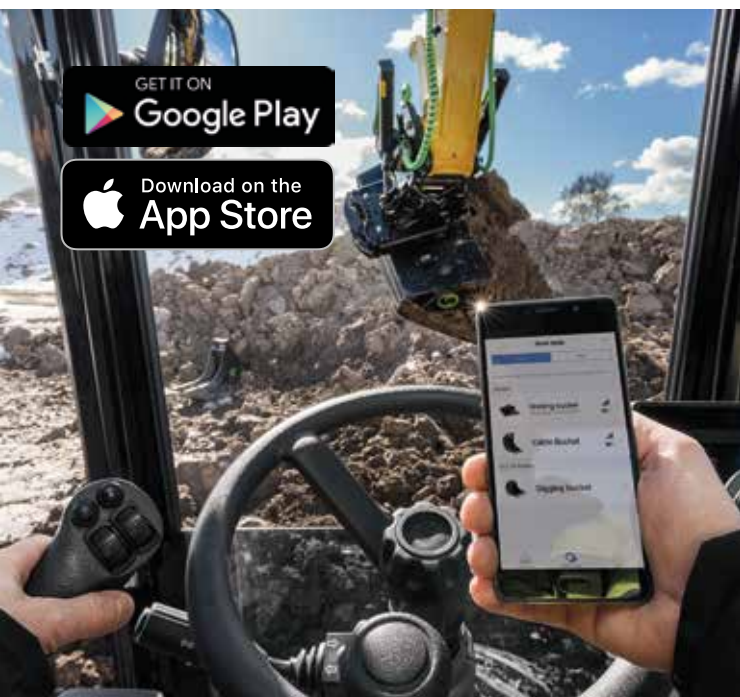
SQ adaptor plate for internal hoses



Pendulum Adaptors



Connected system for highest uptime



Steelwrist supply two types of control systems, both do the job, both comply with all regulations and both will increase your efficiency. The four hose proportional machine control is the more basic system (see Hard facts page 26).

The Quantum platform

Multifunctional ergonomic joystick, simultaneous usage of all functions, remote support and individual profiles for all operators or work tools - all key features to unlock the true efficiency of your excavator. All these are obviously standard in our Quantum platform. With the Quantum app on your smartphone or display in the cabin you will manage settings in a user friendly way.

Add on functionality like joystick steering, track steering, boom swing control or blade control when needed.

Positioning System

- ✓ Direct link to your Machine Control System
- ✓ Clinometer for tilt and rotation angle indication
- ✓ Autotilt



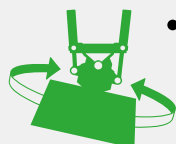
Remote Support

- ✓ One click away from online support
- ✓ Upgrades online



Tiltrotator Control

- ✓ Simultaneous use of all functions
- ✓ Based on technology and knowledge from more than 55 000 tiltrotator installations



Joystick steering



Track control

STEELWRIST TOOL RECOGNITION

Automatic optimization and tracking

Data to your Machine Control System

The basic idea behind the Quantum based Tool Recognition (ToolRec) is a system that automatically detects the work tool which is connected to the excavator. This information can be used by any of our partner systems that you use in your everyday work - Machine Control System, Weighing System, Tiltrotator Control System etc.

Automatic tiltrotator settings

As standard function in our Quantum system each work tool (ToolRec module) can be configured with custom tiltrotator settings. This helps the operator to always optimize tiltrotator performance.

Easy to add new work tools

Setting up a new work tool in Quantum ToolRec is very easy. Just mount the ToolRec module on the work tool, open the Quantum app and tap the new work tool that appears automatically. Name the work tool to your liking and it is now available to any supporting system.

Keep track of your work tools

With Tool Recognition you will have the option to localize your work tools on the workplace as they are tracked. We monitor both the physical position as well as utilization. If you have regular service intervals on your work tools we can automatically call your attention to when the service is due.

Tool Recognition

- ✓ Autodetect used work tools and set profile in MCS
- ✓ Adjust tiltrotator automatically depending on work tools
- ✓ Keep track of your work tools



Quick Coupler Safety

- ✓ Full Quick Coupler safety





STEELWRIST POWERED WORK TOOLS – GRAPPLES

Grapples for your everyday tasks

Steelwrist grapples are made to last and to make your day easy, although each model has its specialized purpose, all are still extremely useful for multipurpose use. You choose the grapple that fits your needs, but you will end up using it for many more tasks.

	Machine Weight	Grapple	Load Area m ²	Opening width	Max load	Weight
Multi grapple	0–2 ton	MG12	0,12	1068 mm	1000 kg	55 kg
	3–6 ton	MG20	0,20	1357 mm	3000 kg	192 kg
	6–12 ton	MG25	0,25	1515 mm	5000 kg	312 kg
	8–16 ton	MG32	0,32	1830 mm	6000 kg	410 kg
	12–18 ton	MG40	0,40	1938 mm	7000 kg	561 kg
Sorting grapple	3–8 ton	SG20	0,20	1250 mm	3000 kg	198 kg
	8–14 ton	SG25	0,25	1707 mm	6000 kg	377 kg
	14–20 ton	SG32	0,32	1830 mm	7000 kg	540 kg
	18–26 ton	SG40	0,40	2204 mm	8000 kg	717 kg
Finger grapple	6–12 ton	FG20	0,20	1389 mm	3000 kg	219/242 kg
	10–16 ton	FG25	0,25	1552 mm	6000 kg	407/439 kg
	12–18 ton	FG32	0,32	1823 mm	7000 kg	630/680 kg
	16–26 ton	FG40	0,40	1956 mm	8000 kg	724/785 kg



Multi Grapples

Application areas are general purpose and log handling such as heavy lifting, stone laying, sorting, loading of cut-to-length timber and waste wood handling.

By-passing jaws that close fully, so that also thin objects can be handled with ease. Hardox 500 in all wear plates and optimized roll in/roll out geometry for log handling.

- ✓ By-passing jaws
- ✓ Optimized roll in/roll out geometry
- ✓ Wide opening and full closure



Sorting Grapples

Application areas are the tougher tasks as large rock handling, recycling, scrap, sorting and medium duty demolition work. High clamp force and wide opening give you the flexibility that you need.

- ✓ Tip-to-tip closing
- ✓ Mechanical end-stops
- ✓ Turnable and bolted cutting edges in HB500 steel



Finger Grapples

A heavy duty five or seven finger universal grapple where dedicated application areas are handling of stumps, debris, scrap and forest residue.

- ✓ By-passing jaws
- ✓ Hardox 500 in all wear plates and hard face
- ✓ HB500 welding in jaws for long life time
- ✓ Wide opening and full closure

Common features between all models:

- ✓ Wide opening. Also available with SQ top, or other standards as S-type, CW-type and HS-type
- ✓ Expander pins
- ✓ Dual guide bars
- ✓ 5° bracket angle to make grapple level with tiltrotator rotation plane
- ✓ Integrated load holding valves
- ✓ High clamp force

Compaction made easy

Steelwrist Compactors are designed for quiet, safe, comfortable and maintenance free compaction of soil, pipeline trenches, embankments, pits and shafts.

The low height and off-center bracket position increase the reach and you can use the compactor under obstacles and in other narrow positions.

The open design allows the compactor plate to self-clean and prevent backfill material to jam the compactor.

The angled housing design and rubber buffers provides optimum force distribution for the compaction work and makes it possible to use in rough terrain. The 15 degree angle also reduce stress on the rubber buffers resulting in less wear.

Additionally the job site safety level is improved as the need for personnel directly in the work area is reduced.

Compactors

- ✓ 15° housing for best force distribution
- ✓ Pressure and flow rate control for overload protection
- ✓ Off centre bracket position allows for compaction under obstacles
- ✓ Bolt on top brackets available with S-, SQ-, CW- and HS-type standards
- ✓ Excenter motor permanently lubricated
- ✓ Low noise motor and rubber buffers reduce oscillation to the operator's cabin



Machine Weight	Compactor	Force kN	Flow l/min	Weight
2–6 ton	HC20	20	30–50	250 kg
5–12 ton	HC40	40	60–80	387 kg
10–22 ton	HC60	60	90–120	620 kg
16–30 ton	HC90	90	120–140	969 kg

High performance excavator sweeper



Sweepers

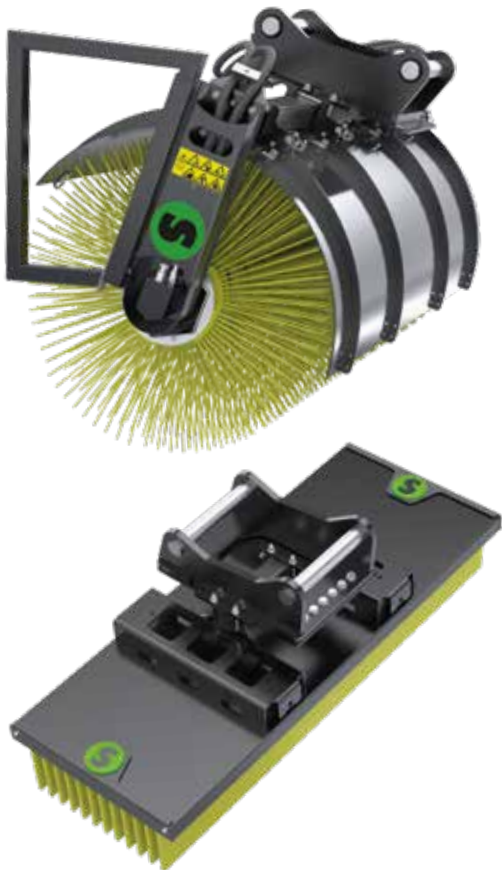
- ✓ Works great with our SQ technology
- ✓ Dual direct drive hydraulic motors
- ✓ Bolt on top brackets available with S-, SQ-, CW- and HS-type standards
- ✓ Integrated parking stand
- ✓ Mudflap as standard

Regardless if you have a need for cleaning pavements, cable trenches, railway switches, tram tracks, roofing, containers, flooding or other disaster areas from debris, material or snow, the Steelwrist sweeper range give you the tool to take on the job.

Instead of using manual shovels, snow plows or other similar work tools the Steelwrist sweeper range will give you access to the work area in a completely different and much more effective way.

Dual direct drive hydraulic motors safeguard the torque needed for efficient brushing and together with Beeline brushes, a long lifetime. The mechanical fixed brush can easily be used under the tiltrotator.

Model	Width	Weight	Motor	Option	Flow req.
SW1000	1000 mm	170 kg	Dual Motor Direct Drive	Twisted core Cartridge brushes	40–130
SW1500	1500 mm	200 kg	Dual Motor Direct Drive	Twisted core Cartridge brushes	40–130
SW2000	2000 mm	250 kg	Dual Motor Direct Drive	Twisted core Cartridge brushes	40–130





STEELWRIST BUCKETS AND WORK TOOLS

Lighter, more durable, more affordable

Our buckets are constantly evolving based on customer feedback and we are now on our fourth generation. The main benefits are even further optimized geometry and volumes.

High grade steel allows us to make a more wear resistant bucket without increasing the weight. Thanks to the sharp growth of our bucket business we have acquired economies of scale in production - the benefit for you is that we can offer high quality buckets at a more affordable price.

Most work tools we have on stock for fast delivery.



Grading buckets

- ✓ Rounded back without corner for easy fill/empty cycle
- ✓ Conical shape for work with tiltrotator
- ✓ Hardox 500 material in all wear plates
- ✓ 20° cutting edge angle
- ✓ Cutting edge in HB 500 material



Cable/Trench buckets

- ✓ Hardox 500 material in all wear plates
- ✓ Cutting edge in HB 500 material
- ✓ 30° cutting edge angle
- ✓ Available with or without teeth
- ✓ Conical or standard shape



Digging buckets

- ✓ Hardox 500 material in all wear plates
- ✓ 30° cutting edge angle
- ✓ CAT J-style tooth system



Skeleton buckets

- ✓ Hardox 500 material in all wear plates



Sorting buckets

- ✓ Hardox 500 material in all wear plates
- ✓ 500 Brinnell steel rods



Utility buckets

- ✓ Hardox 500 material in all wear plates
- ✓ Cutting edge in HB 500 material
- ✓ Dimensions for working in water and sewage applications
- ✓ 30° cutting edge angle



V-ditch buckets

- ✓ Hardox 500 material in all wear plates



Asphalt cutter

- ✓ Asphalt cutter for 3-30 ton excavators



Ripper

- ✓ Ripper S30 to S70



Pallet fork

- ✓ Pallet forks for 3-30 ton excavators, hydraulic and mechanical versions



Brush

- ✓ The mechanical fixed brush can easily be used under the tiltrotator



Grading beam

- ✓ Grading beam for leveling and compaction of material over large areas with tiltrotator

←CUSTOM→

STEELWRIST BUCKETS AND WORK TOOLS – CUSTOM BUILD

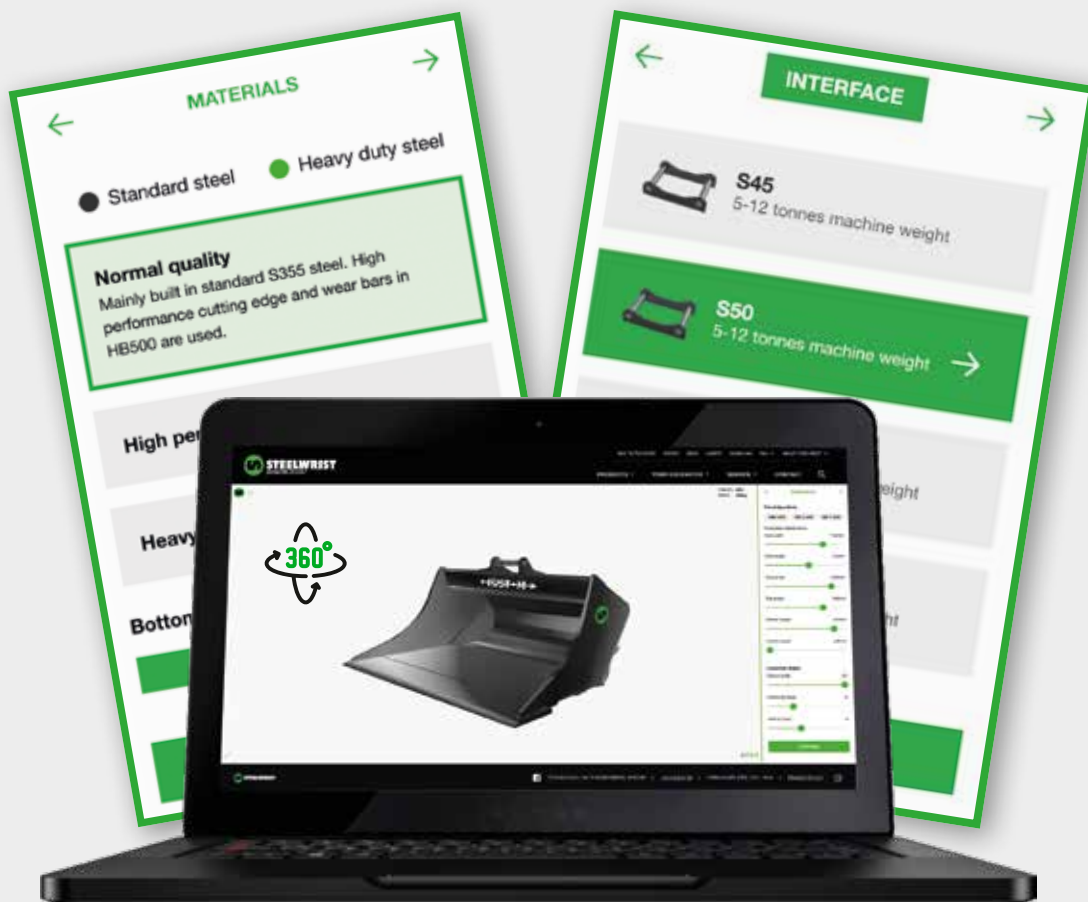
Design your own buckets!

If I only had that specific bucket shape then I would be able to do this job much faster... Ever had that feeling?

We know that many experienced operators may have specific needs! As a technology leading work tool supplier we have the tools available so that you can design your own custom built bucket online. Super easy!

Visit our homepage at steelwrist.com/custombuild and design your own bucket.

You can shape the bucket to your own desire, add teeth and determine material specifications. Price will adjust automatically depending on your choices. Once you have fixed the design and paid we will manufacture the bucket and ship it to the address of your choice.



steelwrist.com/custombuild/



STEELWRIST SUPPORT

Fast service wherever you are

What do you do when the unexpected happens and something is broken?

- ✓ We train and support our dealers for the best service. This means that you get help as soon as something happens. If your dealer does not have the part in stock, we can dispatch from one of our regional warehouses.
- ✓ With the Quantum platform we can also connect to your system directly from our support line. Steelwrist support is built around a number of core concepts in order to give both end customers and Steelwrist dealers the best possible support, 24/7.
- ✓ With product registration you get two year warranty.





SUPPORT LINE

Our telephone and remote support organisation for end customers and dealers.

SERVICE PARTNERS

Both machine dealers and independent service partner. Our first line support locally in each market.

SUPPORT WEB

Available to all dealers and service partners. A comprehensive site with technical information.

FULL SERVICE

Our refurbishment program at a fixed price.

APPLICATION TECHNOLOGY

Support for dealers and service partners. Available in each market.

SPARE PARTS MANAGEMENT

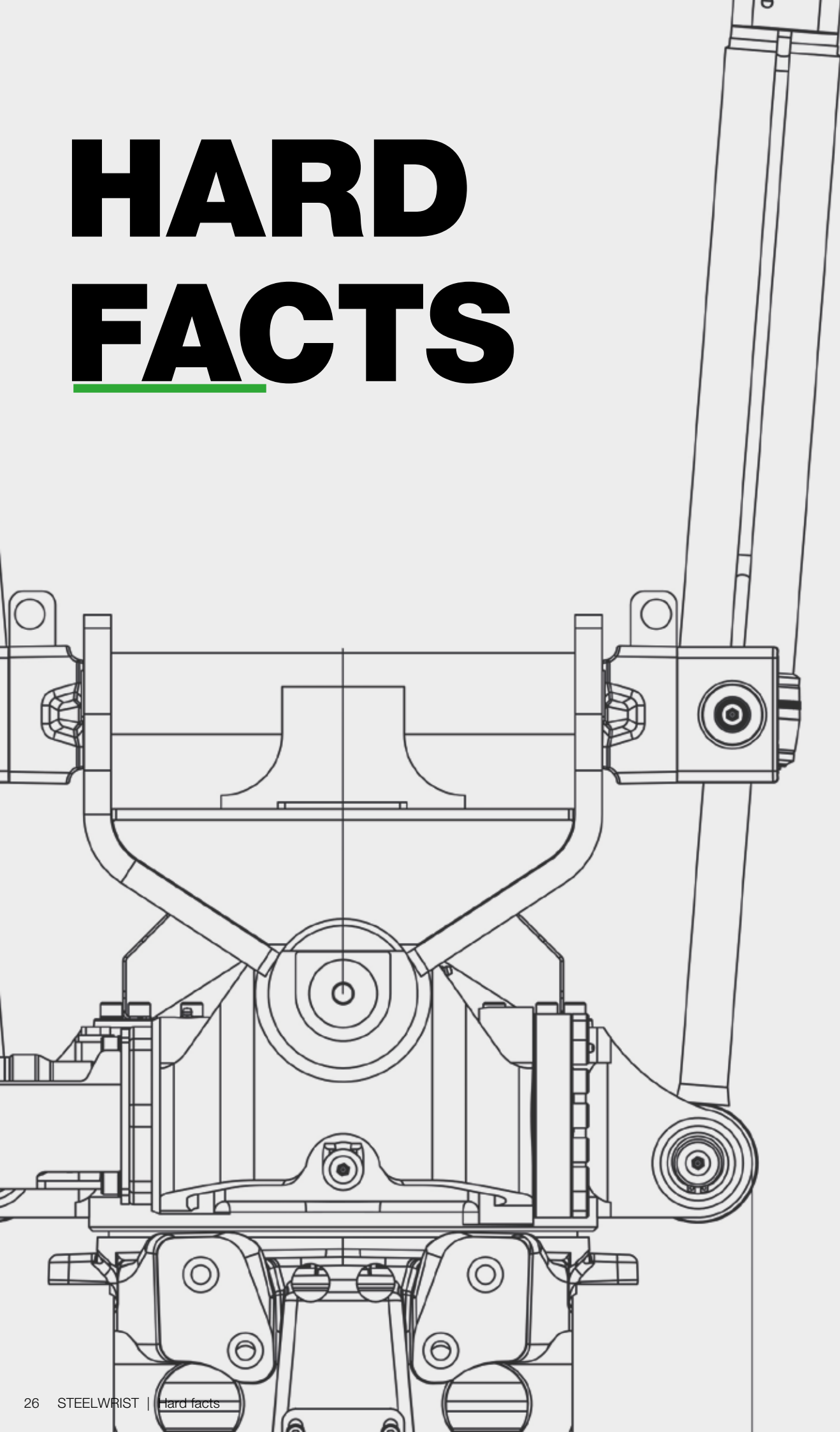
Shipment the same day from either local or central warehouses.

ACADEMY

Both onsite and online via the Support Web.



HARD FACTS



About tiltrotators

Although the tiltrotator was first invented in the late 1980's the technical development pace is today extremely high. The market penetration varies a lot between the most advanced markets where above 90 percent of all excavators have a tiltrotator, to start-up markets where only the true first movers looking for increased efficiency are active.

If you are an experienced user then you probably know what you want, but if you are in the process of investing in your first tiltrotator then here are some basic "good to know" facts that we hope will give you guidance to the best solution for you. Also check out "Ten tips when choosing a tiltrotator" on our homepage.

About quick coupler standards

The overall regulation for how quick couplers should be designed and controlled can be found in the standard ISO13031:2016, although local regulations may exist. ISO13031 divides quick couplers into three allowed types being Form-locked, Force-locked and Wedge-locked. Each type has its specific safety requirements.

Quick couplers can also be divided into Universal (force-locked) and Dedicated (may be form- or wedge-locked). The idea behind the Universal couplers is that they are supposed to pick up the excavator's original bucket. However since all excavator manufacturers have different linkage dimension (width, pin c-c distance and pin diameter) the universal couplers can often pick up buckets from several different manufacturers.

The advantage with universal quick couplers is that they are easy to start with. However, they normally have a high building height, are heavy with a relatively limited surface area to the bucket pin which normally increase wear, increase fuel consumption and reduce break out force at the tooth point. Several different types of Dedicated systems exist. They have in common that they are not trying to pick up the excavator's original bucket but instead all have a dedicated and standardized bucket interface. The advantage with dedicated couplers is that they are normally compact and lighter in design, however the bracket of the original bucket needs to be changed.

In more advanced markets where a dedicated standard is well established normally all buckets with new machines are delivered with standard coupler and a set of buckets with the corresponding bracket.

All Steelwrist products are available with interfaces following the symmetrical standard. However we also deliver products with the Dedicated Lehnhoff (HS) and Verachttert (CW). All SQ products follow the Open-S standard.



Symmetrical
Sandwich or Direct Fit



Universal
Direct Fit only



Lehnhoff
Sandwich or Direct Fit



Verachttert
Direct Fit only

Quick Coupler	Market area	Origin	Type	Standard	Function	Direct fit tiltrotator	Sandwich tiltrotator	Oil Couplings
Symmetrical	International	Scandinavia	Dedicated/ Wedge-locked	Open standard	Compact, light weight, growing internationally	Yes	Yes	Option (Open-S)
Universal	International	UK, Australia, New Zealand	Universal/ Force-locked	N/A	Entry level coupler, high, heavy, important in Anglo-saxon markets	Yes	N/A	N/A
Verachttert CW	Mainly Holland and Belgium	Holland	Dedicated/ Wedge-locked	Verachttert/ Caterpillar	Heavy, safe	Yes	N/A	N/A
Bofors NTP	Finland	Sweden	Dedicated/ Wedge-locked	Open standard	Compact, need manual shimming, developed in 60's	Yes	Yes	N/A
Lehnhoff HS	Germany	Germany	Dedicated/ Wedge-locked	Lehnhoff/ Komatsu	Relatively compact, light weight - strong in Germany	Yes	Yes	Option

About Direct fit vs. Sandwich

Direct fit

In a direct fit configuration the tiltrotator is permanently mounted to the dipper arm of the excavator. Direct fit is common on compact excavators, and on couplers with high building height like CW and Universal.

Sandwich configuration

In a sandwich configuration the machine's quick coupler is first mounted on the dipper arm of the excavator. The top of the tiltrotator then has the same type of bracket as a bucket which means that it can be picked up with the machine's quick coupler.

This is often used for excavators of 14 ton and above and where work tools like hydraulic breaker is used frequently.



About Control Systems

In general two types of control systems exist for controlling the tiltrotator on an excavator. Four hose systems (or variants thereof) where the tiltrotator has on/off valves and the flow is controlled solely from the excavator. Four hose systems are often used for compact excavators as it is less costly and often good enough for the average compact excavator.

However the more demanding customers on mid size excavators often choose two hose systems because of the possibility to use all functions simultaneously, a more fine tuned solution.

In two hose systems the tiltrotator control systems takes care of it all.

Both four hose and two hose systems can be connected to Machine Control Systems like Leica, Topcon, Trimble, iDig and Novatron. The two hose systems are often further enhanced by adding joystick steering for both wheeled and tracked excavators, as well as boom swing control and blade control etc.

Four hose system	Excavator hydraulics	Tiltrotator (TR)			Comment
		Control System	Function	Valves in TR	
	Circuit 1, dual direction, proportionally controlled from the excavator, original joysticks must have rollers or similar.	–	Rotation	On/Off (non directional)	Rotation controlled directly from the machine. Flow control depending on excavator hydraulics.
	Circuit 2, dual direction, proportionally controlled from the excavator, original joystick must have rollers or similar.	On/Off control	Tilt	On/Off (non directional)	Tilt, extra functions and lock share the same circuit, and only one function can be used at the same time. Flow control depending on excavator hydraulics.
			Extra 1 (gripper option)	On/Off (non directional)	
			Extra 2 (work tools)	On/Off (non directional)	
			Coupler lock	On/Off (non directional)	

Two hose system	Excavator hydraulics	Tiltrotator			Comment
		Control System	Function	Valve type	
One circuit, single direction. Original joysticks will be replaced with Steelwrist joysticks with rollers.	Proportional control with compensation if several functions run simultaneously.		Rotation	Proportional (directional)	All functions can be used simultaneously.
			Tilt	Proportional (directional)	
			Extra 1 (gripper option)	Proportional (directional)	
			Extra 2 (work tools)	Proportional (directional)	
			Coupler lock	On/Off (non directional)	

About oil flow vs pressure drops

WE OFTEN GET QUESTIONS LIKE:

I have a work tool that needs 120 liters of oil, can I run it under the tiltrotator?

This is a more complicated question than it may seem at first glance. Let us walk you through the facts.

All hydraulic systems have internal resistance, which is correctly called pressure drop. Hydraulic systems with over-dimensioned hoses, large valves and straight channels have low internal resistance whereas hydraulic systems with under-dimensioned hoses, small valves and many sharp angles have higher internal resistance. The internal resistance in the system will define how much flow you can get through the system at any given pressure. So far quite straight forward and intuitive.

The relationship between pressure and flow is however exponential. If you want to increase flow you will need to increase the pressure exponentially. At very low flow, the additional pressure needed to get "X" liter in addition is not that much. However, in the same hydraulic system already at high flow, the pressure needs to be increased a lot in order to get the same amount of "X" in increased flow.

As a result it is possible to plot the relationship between pressure and flow. This will show how many liters per minute you can get through the system at a certain pressure level. For the sake of argument let's call this the Operating Limit Curve. We also need to add a second line describing the hydraulic pressure limit the machine can be used at. In most cases this pressure is always the same, independent of the flow. Let's call this one the Maximum Pressure Curve. The defined area in between the Operating Limit Curve and the Maximum Pressure Curve, is where the machine will work. Let's call this the Working area.

An example - let's say you have a maximum pressure of 200 bar and you rotate an hydraulic sweeper in the air as fast as you can. You would get 80 liters per minute through the system at point A. Now you engage the sweeper with the ground and start working.

Depending on how much you lower the boom and push the sweeper to the ground, the torque needed to the driver shaft of the sweeper increases. Let's say you push it so the motor needs 130 bar for the torque. The pressure needed for the work to be done, is only possible to reach at a flow of 40 liters per minute, at point B.

Since we started the sweeper in the air at full speed with maximum system pressure, workpoint A, the only way the hydraulic system can handle an increasing load is to reduce the flow. In this case, you have to control the boom lift so the sweeper does not stall and the flow in the system decreases to zero, workpoint C.

This is also applicable to a cylinder application and for example a gripper. If we are closing the gripper in the air with no load, with full speed, we will reach a flow of 80 liters per minute at point A. However, with increasing load to the gripper jaws the cylinder needs higher pressure to deliver a greater force. In most cases the point of using a gripper is to hold material as steady as possible which is achieved with maximum pressure in the cylinder - which is when the flow is down to zero.

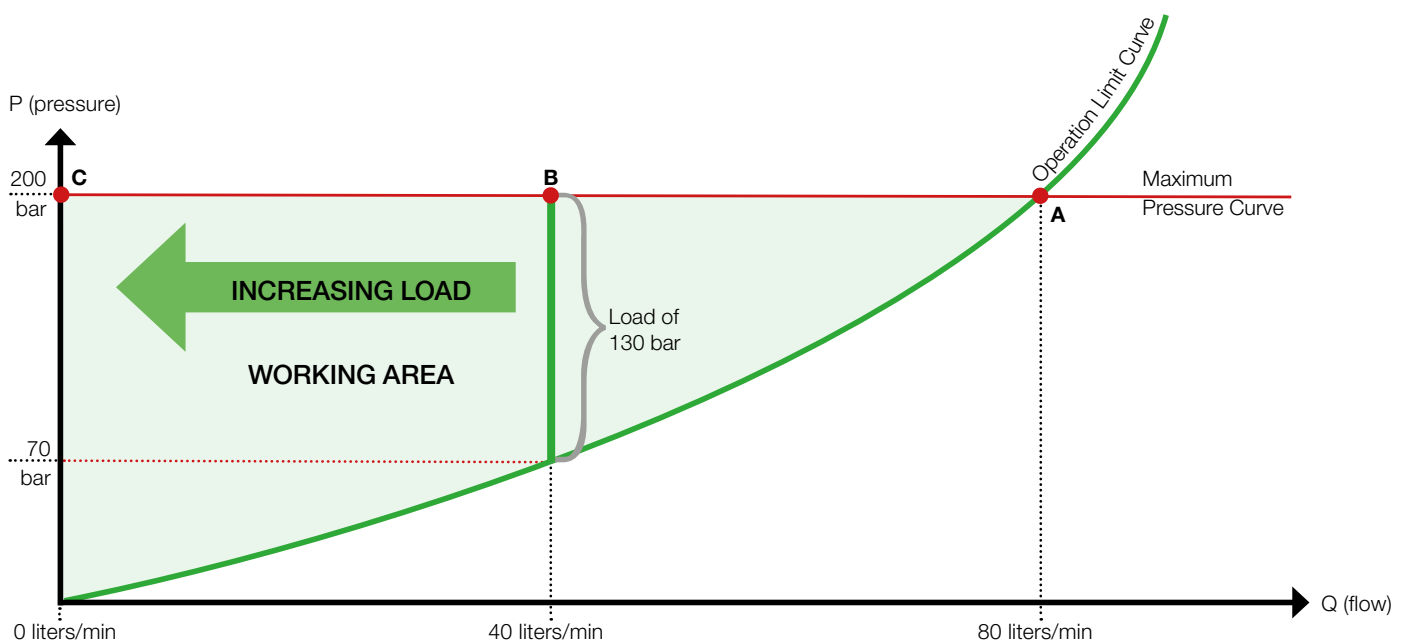
It has to be mentioned that in practise using proportional valves and variable flow, you will end up with different workpoints, although limited by the defined working area.

So back to the original question. Is it possible to use the 120 liter tool below the tiltrotator? The answer is: 'It depends...'

Of course all work tools will move, but the question is how well the tool is matched against the capabilities of the machine as well as the match to the flow requirements of the work tool.

The Steelwrist High Flow Swivel will make the following available:

- 200 liters available at a pressure of 250 bar
- 150 liters available with a pressure drop of 40 bar



QUICK COUPLER											
Machine Weight [ton]	0–2	2–6	2–6	5–12	5–12	12–20	12–20	18–32	25–32	25–43	40–70
MODEL	S30	S40	S40W	S45	S50	S60	S60W	S70	S70W	S80	S90
Mechanical/Hydraulic	M/H	M/H	M/H	H	H	H	H	H	H	H	H
Building Height [mm]	82	95	125	120	130	150	175	175	200	230	265
Weight from [kg]	15	30	38	70	70	135	140	250	260	350	700
Width [mm]	200	200	200	290	270	340	340	450	450	590	750
Length [mm]	230	300	300	430	430	480	480	600	600	670	750
Lifting hook [ton]	0,75	2	2	3	3	5	5	8	8	10	15
Front Pin Lock/Hook	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Body	Casted	Casted	Casted	Casted	Casted	Casted	Casted	Casted	Casted	Casted	Casted
Shaft dia. dipper [mm]	25–35	35–45	35–50	45–60	45–60	60–80	60–80	60–80	70–90	90–110	90–130
Width dipper arm [mm]	Max 125	120–160	160–200	150–228	150–228	252–304	300–330	280–400	350–431	Max 480	Max 510
Pin distance [cc] [mm]	85–150	160–270	235–345	220–365	220–365	330–460	400–460	270–485	470–565	385–585	500–630

SQ COUPLER									
Machine Weight [ton]	5–13	12–20	12–20	14–22	18–33	18–33	25–43	40–75	
MODEL	SQ50	SQ60-4	SQ60-5	SQ65	SQ70	SQ70/55	SQ80	SQ90	
Dimensions [same as]	S50	S60	S60		S70		S80	S90	
Weight [kg]	100	135	135	190	245	310	430	750	
Couplings	5	4	5	5	5	6	6	9	
3/8"	2	–	2 *	–	–	–	–	1	
1/2"	3	2	1	2	2	2	2	3	
3/4"	–	2	2	3	1	2	2	1	
1"	--	--	–	–	2	2	2	4	
Electrical Connector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* 1/4" Germany

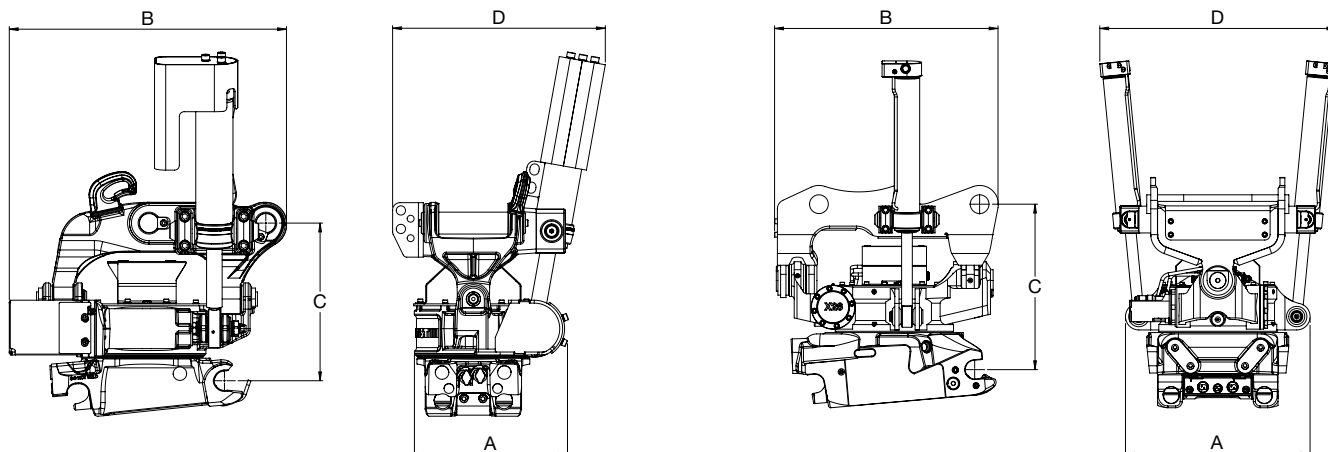
TILT COUPLER / TCX									
Max Machine Weight [ton]	0–2	2–6	5–7	5–12	5–12	12–20	12–20	18–24	18–24
MODEL	TCX S30	TC050/ S40	TC070/ S40	TC100/ S45	TC100/ S50	TC180/ S60	TC180/ SQ60-5	TC240/ S70	TC240/ SQ70
Weight [kg]	28	95	145	210	210	360	380	620	650
Building Height [mm]	190	358	381	445	445	495	490	599	631
Width [mm]	235	220	220	310	310	394	394	500	500
Max tilt angle [degree]	±30°	±90°	±90°	±90°	±90°	±60°	±60°	±60°	±60°
Tilt Torque [kNm]	–	2,6	4,3	6,6	6,6	13,3	13,3	17,8	17,8
Holding Torque [kNm]	–	9,4	14,8	20,4	20,4	40,7	40,7	53,1	53,1
Required Oil Flow [l/min]	5–10	9–28	15–30	19–58	19–58	26–78	26–78	35–105	35–105
Lifting hook [ton]	0,75	3	3	3	3	5	5	8	8
Max Circuit Pressure [bar]	175	210	210	210	210	210	210	210	210
Bracket	S30	S40	S40	S45	S50	S60	SQ60-5	S70	SQ70

TILTROTATOR (VALUE WITH GRIPPER)										
Machine Weight [ton]	0-2	2-4	4-6	5-7	7-12	10-14	12-16	16-20	18-26	25-33
MODEL	X02	X04	X06	X07	X12	X14	X18	X20	X26	X32
Upper coupler	DF S30	DF S40 HS03	DF S40 HS03	DF S40 S45 S50	DF S45 S50 SQ50 HS08	DF S45 S50 SQ50	DF S60 SQ60-5 HS10	DF S60 SQ60-5 SQ65* HS10	DF S70 SQ70 SQ70/55 HS21	DF S70 SQ70 SQ70/55 S80 SQ80
Attachment coupler Dedicated	S30	S40 HS03 CW05	S40 HS03 CW05	S40 S45 S50 HS08 CW10	S45 S50 SQ50 HS08 CW10	S45 S50 SQ50	S60 SQ60-5 HS10 CW20	S60 SQ60-5 SQ65* HS10 CW20	S70 SQ70 S70/55 SQ70/55 HS21 CW30	S70 SQ70 S70/55 SQ70/55 CW40 S80 SQ80
<i>(Not all can be combined with all upper couplers)</i>										
Max tilt angle [Degrees]	± 40	± 45	± 45	± 45	± 45	± 45	± 45	± 45	± 45	± 45
Req hydraulic oil flow [l/min]	15-30	20-40	20-40	30-50	70-90	80-100	80-100	100-120	100-120	120-140
Max pressure [bar]	175	210	210	210	210	210	210	210	210	210
Hydraulic extra functions	1	1(0)	1(0)	1(0)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)
A. Width [mm]	320	314 (459)	314 (459)	365 (570)	567 (578)	618 (636)	616 (717)	690 (717)	690 (807)	729 (807)
B. Length [mm]	430	525 (642)	527 (642)	618 (791)	625 (764)	724 (814)	726 (952)	816 (1003)	827 (1116)	870 (1167)
C. Building height from [mm]	260	343	343	396	425	455	458	508	536	625
D. Width cylinders [mm]	325	499	499	586	676	685	737	733	826	937
Weight from [kg]	75	115 (151)	135 (171)	195 (251)	285 (348)	380 (443)	400 (512)	445 (557)	570 (687)	840 (957)
Gripper reach [mm]	–	(425)	(425)	(513)	(508)	(508)	(820)	(820)	(960)	(967)
Tilt force [kNm]	5,9	10,6	11,0	13,8	29,0	41,0	41,0	47,0	61,0	73,0
Rotation force [kNm]	1,9	3,9	4,9	5,2	5,4	7,8	7,8	8,8	8,8	9,8
Central Lubrication	–	Option	Option	Option	Option	Option	Option	Option	Option	Option
DATATAG	–	Option	Option	Option	Option	Option	Option	Option	Option	Option

All dimensions are depending on configuration.

* 18-22 tonnes

Technical specifications



MULTI GRAPPLE					
Machine Weight [ton]	0-2	3-6	6-12	8-16	12-18
MODEL	MG12	MG20	MG25	MG32	MG40
Load area [m ²]	0,12	0,2	0,25	0,32	0,4
Gripper reach [mm]	1068	1357	1515	1800	1938
Gripper reach, smallest object [mm]	85	55	98	98	109
Max Load [kg]	1000	3000	5000	6000	7000
Weight [kg]	55	192	312	410	561
Gripper force [kN] [tip against tip]	5,9	12,5	17	21	25
Height [tip against tip] [mm]	618	843	919	1101	1127
Height [max open]	557	747	781	949	941
Width [mm]	295	504	594	660	691
Bracket	S30	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW05, CW10, HS03, HS08	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW10, HS08	S50, S60, S70, SQ50, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW30, HS10	S60, S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW30, HS10

STONE AND SORTING GRAPPLE				
Machine Weight [ton]	3-8	8-14	14-20	18-26
MODEL	SG20	SG25	SG32	SG40
Load area [m ²]	0,2	0,25	0,32	0,4
Gripper reach [mm]	1250	1707	1830	2204
Max Load [kg]	3000	6000	7000	8000
Weight [kg]	198	377	540	717
Gripper force [kN] [tip against tip]	10	15	20	25
Height [tip against tip] [mm]	655	848	1010	1126
Height [max open]	500	610	863	826
Width [mm]	518	600	654	700
Bracket	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW05, CW10, HS03, HS08	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW10, HS08	S50, S60, S70, SQ50, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW40, HS21	S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW40, HS21

FINGER GRAPPLE				
Machine Weight [ton]	6-12	10-16	12-18	16-26
MODEL	FG20-5/ FG20-7	FG25-5/ FG25-7	FG32-5/ FG32-7	FG40-5/ FG40-7
Load area [m ²]	0,2	0,25	0,32	0,4
Gripper reach [mm]	1389	1552	1823	1956
Max Load [kg]	3000	6000	7000	8000
Weight [kg]	219/242	407/439	630/680	724/785
Gripper force [kN] [tip against tip]	10	15	20	25
Height [tip against tip] [mm]	817	877	1033	1088
Height [max open]	686	700	863	866
Width [mm]	504	672	698	754
Bracket	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW05, CW10, HS03, HS08	S40, S45, S50, S60, SQ60-4, SQ60-5, CW05, CW10, HS03, HS08	S50, S60, S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW40, HS21	S60, S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW30, HS10

Grapples = Max operating pressure [bar] 250

COMPACTOR/VIBRO				
Machine Weight [ton]	2–6	5–12	10–22	16–30
MODEL	HC20	HC40	HC60	HC90
Vibration Force [kN]	20	40	60	90
Vibration Frequency [Hz]	38	38	38	38
Weight [kg]	250	387	620	969
Length [mm]	700	850	960	1050
Width [mm]	410	610	700	800
Height [mm]	493	542	595	643
Load Area [m ²]	0,27	0,52	0,67	0,98
Hydraulic Pressure [rec/max]	150/250	150/250	150/250	150/250
Hydraulic Flow [l/min]	30–50	60–80	90–120	120–140
Bracket	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW05, CW10, HS03, HS08	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW10, HS08	S60, S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, CW30, HS10	S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, SQ80, CW40, HS21

SWEEPER			
MODEL	SW1000	SW1500	SW2000
Width [mm]	1000	1500	2000
Motor	Dual Motor Direct Drive	Dual Motor Direct Drive	Dual Motor Direct Drive
Mudflap	Standard	Standard	Standard
Flow requirements [l/min]	40–130	40–130	40–130
Integrated parking stand	Yes	Yes	Yes
Brush / Option	Bee-Line / Twisted core cartridge brushes		
Bracket	S45, S50, S60, S65, S70/55, SQ50, SQ60, SQ65, SQ70, SQ70/55, HS08, HS10, CW10, CW20		
Weight from [kg]	230	280	350

BRUSH		
MODEL	FB1800	FB2500
Width [mm]	1800	2500
Bracket	S40, S45, S50, S60, S70	S60, S70
Weight from [kg]	230	280

GRADING BEAM					
MODEL	GR1250	GR1500	GR2000	GR2500	GR3000
Width [mm]	1250	1500	2000	2500	3000
Weight [kg]	210	400	480	560	640
Bracket	S40, S45, HS03, CW05	S40, S45, S50, HS03, CW05	S45, S50, S60, S65, S70/55, SQ65, SQ70/55, HS08, CW10, CW20	S60, S65, S70, S70/55, SQ65, SQ70/55, HS10, HS21, CW20, CW30-40	S60, S65, S70, S70/55, SQ65, SQ70/55, HS10, CW20, CW30-40

HYDRAULIC PALLET FORK	
MODEL	HPF5000
Width [mm]	1500
Lifting capacity [kg]	5000
Bracket	SQ50, S60, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, SQ80

BUCKETS AND WORK TOOLS

Machine Weight [ton]	0–2	0–2		1–3		2–4			3–5	4–6			6–8			8–				
Bracket	S30*	S30*		S30*		S40, HS03			S40, HS03	S40, HS03			S45, S50, HS08			S45, S50,				
Grading bucket	GB08	GB1	GB1	GB2	GB2	GB2	GB2	GB3	GB4	GB5		GB6	GB6			GB9				
	Volume [liter] [ISO 7451]	40	60	80	90	100	90	100	150	200	250	300	300			360				
	Volume [liter] [SAE J296]	50	75	100	120	135	120	135	185	255	320	380	380			450				
	Width [mm]	700	800	1000	900	1000	900	1000	1000	1100	1200	1300	1300			1300				
	Weight [kg]	40	50	65	65	75	70	80	100	135	170	195	210			245				
Digging bucket with teeth		DB1T		DB2T		DB2T	DB2T	DB2T	DB3T	DB4T	DB5T	DB5T	DB5T	DB6T	DB6T	DB6T	DB9T	DB9T		
	Volume [liter] [ISO 7451]		40		70		40	70	100	100	140	190	210	260	170	210	280	160	210	
	Volume [liter] [SAE J296]		55		85		60	85	125	120	180	240	260	330	215	265	355	205	265	
	Width [mm]		400		450		300	450	600	500	600	700	750	900	600	700	900	450	600	
	Weight [kg]		45		55		50	60	75	85	110	135	145	160	145	155	190	185	210	
Digging bucket	DB08	DB1		DB2		DB2	DB2	DB2	DB3	DB4	DB5	DB5	DB5	DB6	DB6	DB6	DB9	DB9		
	Volume [liter] [ISO 7451]	30	40		70		40	70	100	100	140	190	210	260	170	210	280	160	210	
	Volume [liter] [SAE J296]	40	55		85		60	85	125	120	180	240	260	330	215	265	355	205	265	
	Width [mm]	400	400		450		300	450	600	500	600	700	750	900	600	700	900	450	600	
	Weight [kg]	30	35		45		45	50	65	75	100	125	135	155	135	145	180	180	200	
Cable/Trench bucket		CB1		CB2		CB3		CB3C		CB3	CB3C	CB5	CB05	CB5	CB6	CB6C	CB6	CB6	CB9C	
	Volume [liter] [ISO 7451]		25		30		50		50		50	50	60	90	100	100	80	100	110	80
	Volume [liter] [SAE J296]	–	30		40		65		65		65	65	80	120	140	135	105	135	145	110
	Width [mm]		240		290		300		400/200		300	400/200	300	400	450	400	380/300	400	450	400/200
	Weight [kg]		25		30		55		60		55	60	70	80	85	95	110	110	115	120
Cable/Trench bucket with teeth				CB2T		CB5T			CB5T		CB5T		CB5T		CB6TC		CB6T	CB12T		
	Volume [liter] [ISO 7451]				30		100			100		60		100		80		110	150	
	Volume [liter] [SAE J296]	–	–		40		140			140		80		140		105		145	200	
	Width [mm]				290		450			450		300		450		380/300		450	400	
	Weight [kg]				40		95			95		75		95		110		120	225	
Utility bucket																				
	Volume [liter] [ISO 7451]	–	–		–		–			–		–		–		–		–		
	Volume [liter] [SAE J296]]																			
	Width [mm]																			
	Weight [kg]																			
V-ditch bucket				VB2		VB3			VB4		VB4		VB6		VB8		VB8			
	Volume [liter] [ISO 7451]	–	–		90		140			200		200		240		400		400		
	Width [mm]				900/200		1100/200			1200/200		1200/200		1400/300		1700/300		1700/300		
	Weight [kg]				65		120			195		195		210		290		290		
Sorting bucket				SOB2		SOB3			SOB4		SOB4		SOB6		SOB8		SOB8			
	Volume [liter]	–	–		130		130			200		200		300		370		370		
	Width [mm]				900		900			1000		1000		1200		1300		1300		
	Weight [kg]				90		90			140		140		165		290		290		
Skeleton bucket				SKB2		SKB4			SKB4		SKB4		SKB4		SKB6		SKB8			
	Volume [liter]	–	–		60		130			130		130		160		370		370		
	Width [mm]				500		600			600		600		800		1000		1000		
	Weight [kg]				50		85			85		85		170		300		300		
Asphalt cutter						AC5			AC5		AC5		AC5		AC10		AC10			
	Diameter [mm]	–	–		–		400			400		400		470		470		470		
	Thickness [mm]						8			8		8		10		10		10		
	Weight [kg]						50			50		50		70		70		70		
Pallet fork						PF2000			PF2000		PF2000		PF2000		PF2500		PF2500			
	Lifting capacity	–	–		–		2 ton			2 ton		2 ton		2,5 ton		2,5 ton		2,5 ton		
	Width [mm]						1200			1200		1200		1200		1200		1200		
	Weight [kg]						145			145		145		205		205		205		
Ripper						RP40			RP40		RP40		RP45/RP50		RP45/RP50					
	Length [mm]	–	670		670		710			710		710		860		860		860		
	Weight [kg]		30		30		100			100		100		190		190		190		

* S30/180

12		11–13			13–15					15–16		16–18				18–22		22–33		28–43		
HS08		S45, S50, HS08, S60			S60, HS10					S60, S65, HS10		S60, S65, HS10				S60, S70, S70-55, HS21		S70, S70-55, HS21		S80		
GB9		GB12	GB12		GB14					GB15		GB17				GB20		GB25	GB30	GB30	GB35	GB40
400		500	550		630					730		840				1020		1280	1530	1530	1850	2280
500		630	690		790					910		1060				1270		1600	1910	1910	2310	2850
1400		1400	1500		1500					1600		1700				1800		1900	2000	2000	2200	2400
250		350	415		590					660		740				970		1190	1550	1600	1920	2190
DB9T	DB9T	DB12T	DB12T	DB12T	DB13T	DB14T	DB14T	DB14T	DB14T	DB15T	DB15T	DB17T	DB17T	DB17T	DB17T	DB20T	DB20T	DB25T	DB30T	DB30T		
260	350	250	370	430	460	220	270	510	690	590	890	330	570	660	820	720	880	1100	1250	1250		
325	445	320	465	545	575	275	350	655	860	735	1105	430	720	825	1030	910	1090	1370	1560	1560		
700	900	600	800	900	900	450	600	950	1200	1000	1400	600	900	1000	1200	1050	1200	1250	1300	1300		
235	285	265	340	365	440	335	365	515	630	550	760	445	590	640	720	930	1050	1170	1510	1580		
DB9	DB9	DB12	DB12	DB12	DB13	DB14	DB14	DB14		DB15		DB17	DB17	DB17	DB17	DB20		DB25		DB30		
260	350	250	370	430	460	220	270	510		590		330	570	660	660	720		1100		1250		
325	445	320	465	545	575	275	350	655		735		430	720	825	825	910		1370		1560		
700	900	600	800	900	900	450	600	950		1000		600	900	1000	1000	1050		1250		1300		
225	275	240	310	335	395	315	330	465		505		410	550	590	600	810		1050		1460		
CB9		CB12			CB15		CB15C			CB15C		CB17				CB20		CB25	CB30	CB30		
120		150			230		140			140		270				330		430	590	590		
165		200			305		190			190		370				445		580	800	800		
400		400			500		480/300			480/300		550				590		650	800	800		
135		210			330		265			265		370				550		610	790	840		
CB12T		CB12T			CB15T					CB15T		CB15T				CB15T						
150		150			230					230		230				230						
200		200			305					305		305				305		–		–		
400		400			500					500		500				500						
225		225			365					365		365				365						
					UB15		UB15			UB15		UB17				UB20		UB25	UB30	UB30		
–		–			360		360			360		460				580		630	790	790		
					495		495			495		630				820		860	1080	1080		
					700		700			700		800				900		900	1000	1000		
					420		420			420		500				550		660	760	760		
VB8		VB8			VB15					VB15		VB15				VB20		VB20				
400		400			500					500		500				600		600		–		
1700/300		1700/300			1750/300					1750/300		1750/300				2000/350		2000/350				
290		290			390					390		390				570		570				
SOB8		SOB8			SOB14		SOB15			SOB15		SOB17				SOB20		SOB25		SOB25		
370		370			650		750			750		900				1100		1400		1400		
1300		1300			1600		1600			1600		1700				1700		2000		2000		
290		290			440		630			630		700				920		1050		1130		
SKB8		SKB8			SKB14																	
370		370			620					–		–				–		–		–		
1000		1000			1300																	
300		300			530																	
AC10		AC10			AC15					AC15		AC15				AC20		AC20				
470		470			470					470		470				470		470		–		
10		10			10					10		10				10		10				
70		70			100					100		100				160		160				
PF2500		PF2500			PF5000					PF5000		PF5000				PF5000		PF5000				
2,5 ton		2,5 ton			5 ton					5 ton		5 ton				5 ton		5 ton		–		
1200		1200			1200					1200		1200				1200		1200				
205		205			330					330		330				400		400				
RP45/RP50		RP45/RP50			RP60					RP60		RP60				RP70		RP70				
860		860			1050					1050		1050				1275		1275		–		
190		190			340					340		340				640		640				



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Open-S – the open industry standard for fully automatic quick couplers for excavators. The purpose of Open-S is to provide global interchangeability between quick couplers, tiltrotators and work tools from different manufacturers.

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