DOWERED BY STEELWRIST







COMMITMENT TO BUILDING BETTER LIVES

Since 1947 Werk-Brau has manufactured the highest quality and most innovative products for the heavy equipment industry. Werk-Brau is respected internationally for providing outstanding customer service and being dedicated to excellence in all aspects of our business. Duke Werkheiser and Dutch Brautigan, for whom the company is named after, first opened their blacksmith shop in Findlay Ohio. Still today Werk-Brau manufactures and produces in Findlay OH, in a state-of-the-art facility.

Our core values are everybody matters, positive attitude, keep it simple, take ownership and do the right thing. It is with those core values that we work with our partners, customers, dealers, supppliers and our employees to build better lives. They are the guiding principles that make us who we are as an organization. Through 75 years and having passed through three generations the Werk-Brau name bares the time-tested quality that our founders had a vision for. Each and every product is crafted by our dedicated team to reach our customers and help build the world around us into a better place tomorrow than it is today.

TABLE OF CONTENTS

- **04.** The key to unlock your excavator efficiency
- **06.** Changing powered work tools in seconds
- 07. Quick Couplers
- 08. Tilt Rotators
- 10. Sq Adaptors
- 11. Control Systems
- 12. Tool Recognition And Tracking
- **13.** Powered Work Tools Grapples
- **15.** Steelwrist Powered Work Tools Compactors
- 16. Powered Work Tools Sweepers
- 17. Buckets And Work Tools
- **22.** Technical Information

POWERED BY STEELWRIST

The key to unlock your excavator Building Better Lives

Enablers and Automation

The core of the Werk-Brau powered by 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 and most efficient tiltrotator, we have the solution for you.

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.

Werk-Brau powered by 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.



ENABLERS

WORK TOOLS

Tiltrotators



Tilt couplers





Quick couplers





Powered work tools













Work tools











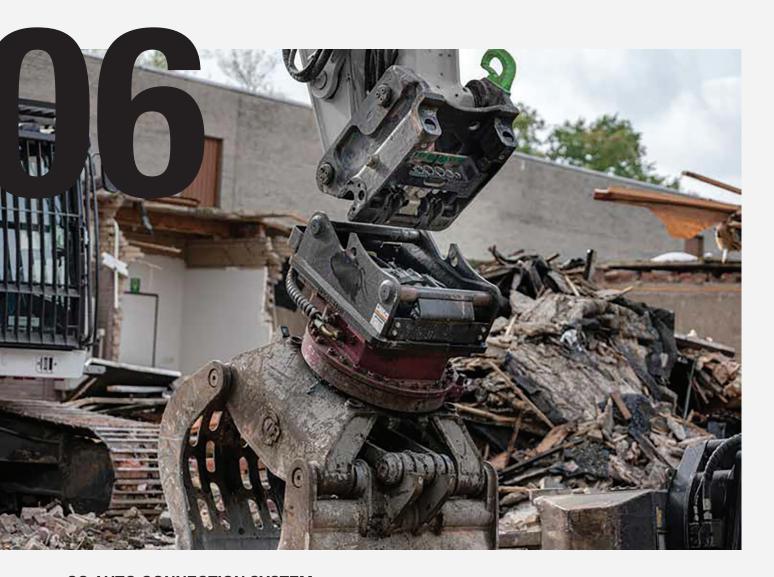












SQ AUTO CONNECTION SYSTEM

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 SQ technology you change between hydraulic powered work tools as well as mechanical work tools in only seconds – all without leaving the cab!

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.

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

Qplus™ - More uptime!

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 Qplus[™] couplings is done fast and easy without need for proprietary and complicated tools.

WERK-BRAU 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.

For the demolition segment the Front Pin Lock has since been 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 (inch)	Weight from	Max Oil Couplings
SYMMETRICAL				
< 5500	S30*	3.2	33 lbs	-
4400-3200	S40*	3.9-4.7	66/77 lbs	-
11000-26500	S45*	4.7	154 lbs	-
11000-26500	S50*	4.7	154 lbs	-
26500-44100	S60*	5.3-6.7	265 lbs	-
39700-72700	S70*	6.9-7.9	551 lbs	-
55100-94800	S80*	9.1	860 lbs	-
88200-165300	S90*	10.4	1543 lbs	-
SYMMETRICAL F	ULLY AUTOMATIC			
11000-28500	SQ50	5.1-5.3	220 lbs	5
26500-44100	SQ60-4	5.3-6.7	265 lbs	4
26500-44100	SQ60-5	5.3-6.7	265 lbs	5
30900-48500	SQ65	6.3	551 lbs	5
39700-72700	SQ70	6.9-7.9	551 lbs	5
39700-72700	SQ70/55	6.9-7.9	551 lbs	6
55100-94800	SQ80	9.0	926 lbs	6
88200-165300	SQ90	10.4	1653 lbs	9

^{*} WBS30 and WBS40 in mechanical and hydraulic locking

WERK-BRAU POWERED BY STEELWRIST TILTROTATORS

The most compact and optimized tiltrotator on the market



SQ Technology

All tiltrotators from WBX12 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 (inch)	Weight from
0-4400 lbs	X02	10.2	132 lbs
4400-8800 lbs	X04	13.5	254 lbs
8800-13200 lbs	X06	13.5	298 lbs
11000-15400 lbs	X07	15.6	430 lbs
15400-26500 lbs	X12	16.7	628 lbs
22000-30900 lbs	X14	17.9	838 lbs
26500-39700 lbs	X18	18.0	882 lbs
35300-44100 lbs	X20	20.0	981 lbs
39700-57300 lbs	X26	21.1	1257 lbs
55100-72700 lbs	X32	24.6	1852 lbs

High Flow Hydraulics and rotation sensors

Our 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

び Absolute Rotation Sensor

WERK-BRAU POWERED BY 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. 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

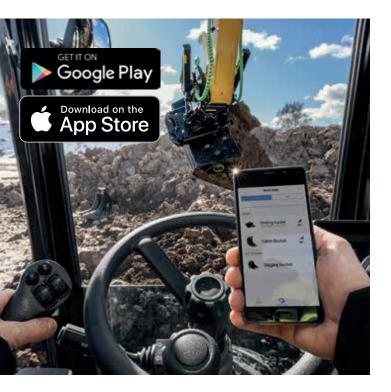


Pendulum Adaptors



WERK-BRAU POWERED BY STEELWRIST

Connected system for highest uptime



Werk-Brau powered by 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 20).

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.



- 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



steering

WERK-BRAU POWERED BY 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

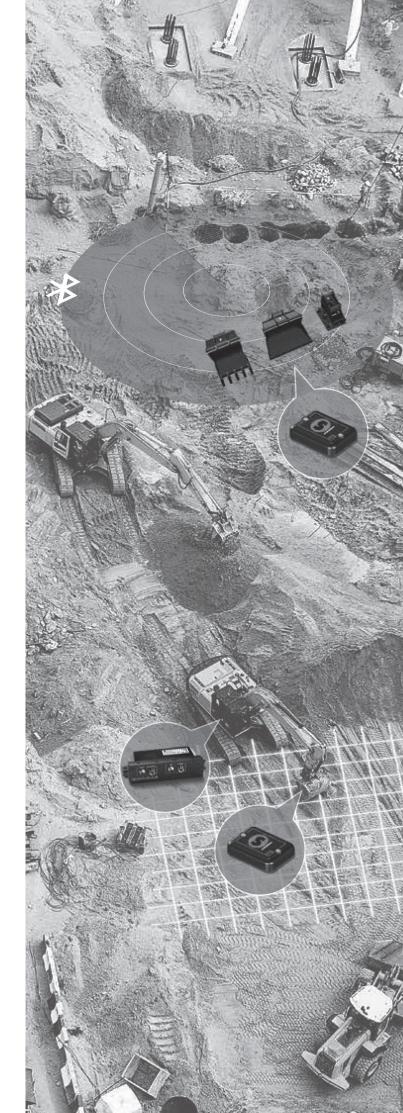




Quick Coupler Safety









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 wit for many more tasks.

	Machine Weight	Grapple	Load Area yd3	Opening width (inch)	Max load	Weight
	0-4400 lbs	MG12	90	42"	2 204 lbs	121 lbs
ople	6600-13200 lbs	MG20	180	54"	6 615 lbs	423 lbs
grap	13200-26500 lbs	MG25	180	59"	11 025 lbs	688 lbs
Multi grapple	17700-35300 lbs	MG32	240	72"	13 227 lbs	904 lbs
	26500-30900 lbs	MG40	300	76"	15 432 lbs	1 237 lbs
ple	13200-26500 lbs	SG20	180	49"	6615 lbs	437 lbs
Sorting grapple	17700-35300 lbs	SG25	180	67"	13 227 lbs	831 lbs
ting	22000-44100 lbs	SG32	240	72"	15 432 lbs	1 190 lbs
Sor	35300-57300 lbs	SG40	300	87"	17 363 lbs	1 581 lbs
ple	13200-26500 lbs	FG20	180	55"	6615 lbs	483 lbs
Finger grapple	17700-35300 lbs	FG25	180	61"	13 227 lbs	897 lbs
ger	26500-44100 lbs	FG32	240	72"	15 432 lbs	1 389 lbs
iË	35300-57300 lbs	FG40	300	77"	17363 lbs	1 596 lbs



Multi Grapples

Application areas are general purpose and log handling such as heavy lifting, stone laying, sorting, loading of cut-tolength 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

STEELWRIST POWERED WORK TOOLS - COMPACTORS

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 gpm	Weight
4 400-13200 lbs	WBHC20	20	6.8-11.4	551 lbs
11000-26500 lbs	WBHC40	40	13.6-18.2	853 lbs
22000-48500 lbs	WBHC60	60	20.4-27.2	1367 lbs
35300-66100 lbs	WBHC90	90	27.2-31.8	2136 lbs

STEELWRIST POWERED WORK TOOLS - SWEEPERS

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.
WBSW1000	3'-3"	375 lbs	Dual Motor Direct Drive	Twisted core Cartridge brushes	11-34 gpm
WBSW1500	4'-11"	441 lbs	Dual Motor Direct Drive	Twisted core Cartridge brushes	11-34 gpm
WBSW2000	6'-7"	551 lbs	Motor Direct Direct Drive	Twisted core Cartridge brushes	11-34 gpm







WERK-BRAU BUCKETS AND WORK TOOLS

Lighter, more durable, more affordable

Our buckets are constantly evolving based on customer feedback and we are now on our forth 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
- Abrasion resistant
- 20° cutting edge angle
- ✓ Cutting edge in AR500 material



Cable/Trench buckets

- of Abrasion resistant material in all wear plates
- Cutting edge in AR 500 material
- 30° cutting edge angle
- Available with or without teeth
- Conical or standard shape

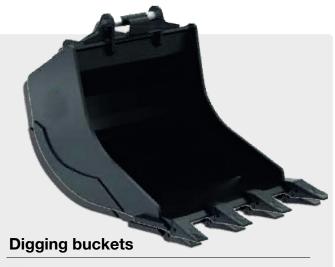


Skeleton buckets

Abrasion resistant material in all wear plates



- Abrasion resistant material in all wear plates
- Cutting edge in AR 500 material
- Oimensions for working in water and sewage applictions
- 30° cutting edge angle



- Abrasion resistant material in all wear plates
- 30° cutting edge angle
- CAT J-style tooth system



Sorting buckets

- Abrasion resistant material in all wear plates
- 500 Brinnell steel rods



V-ditch buckets

O Abrasion resistant material in all wear plates





Ripper

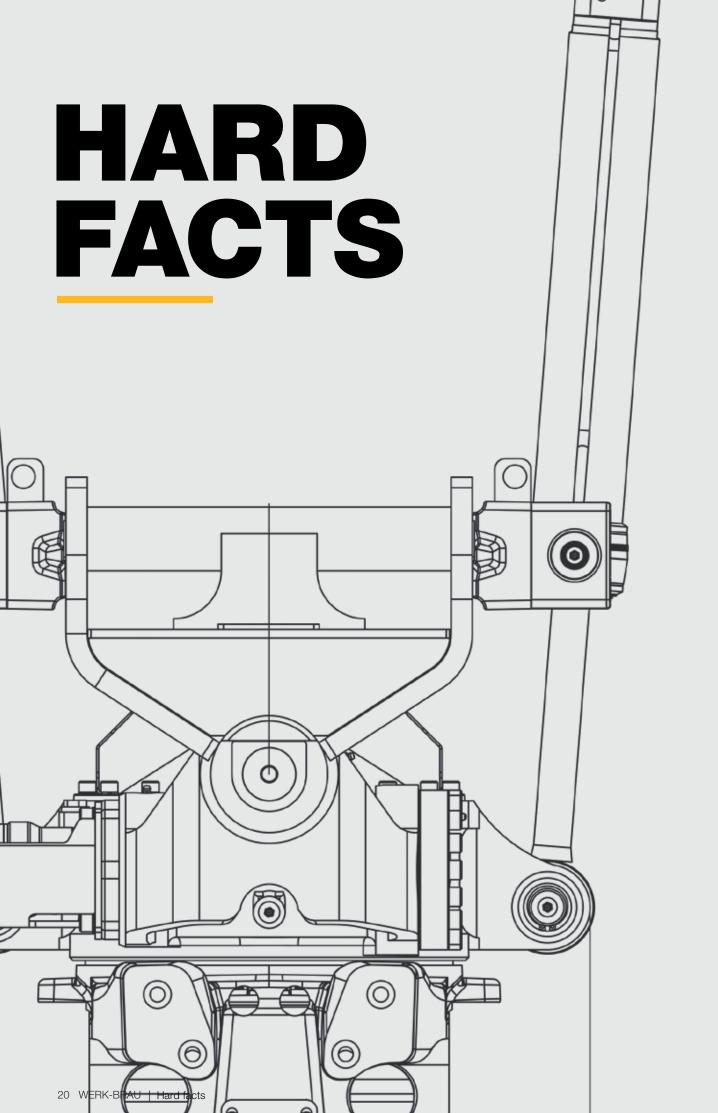
✓ Ripper WBS30 to WBS70







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



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.

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

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

About oil flow vs pressure drops

WE OFTEN GET QUESTIONS LIKE:

I have a work tool that needs 32 Gallons 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 Gallons 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 2900 Psi and you rotate an hydraulic sweeper in the air as fast as you can. You would get 21 Gallons 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 1885 Psi for the torque. The pressure needed for the work to be done, is only possible to reach at a flow of 10.5 Gallons 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 21 Gallons 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.

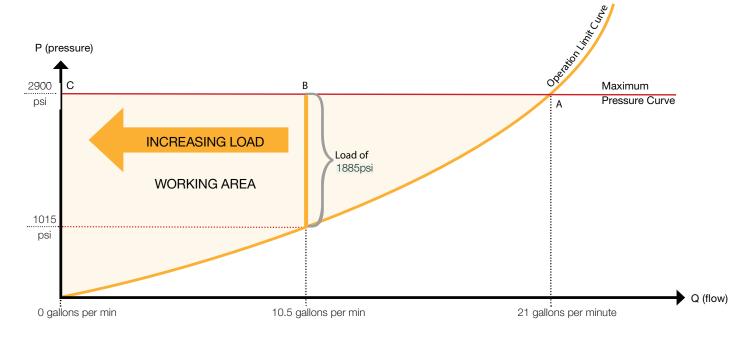
It has to be mentioned that in practise using proportional valves and variable flow, you will end up with different workpoints, although limited by the defined working area.

So back to the original question. Is it possible to use the 32 Gallons 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 Werk-Brau powered by 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
- 52 gallons available at a pressure of 3625psi
- 40 gallons available with a pressure drop of 580psi



QUICK COUPLER											
Machine Weight [lbs]	0-4400	4400-13200	4400-13200	11000-26500	11000-26500	26500-44100	26500-44100	39700-70500	39700-70500	55100-94800	11000-26500
MODEL	WBS30	WBS40	WBS40W	WBS45	WBS50	WBS60	WBS60W	WBS70	WBS70W	WBS80	WBS90
Mechanical/Hydraulic	M/H	M/H	M/H	Н	Н	Н	Н	Н	Н	Н	Н
Building Height [inch]	3.2"	3.9"	4.7"	4.7"	4.7"	5.3"	6.7"	6.9"	7.9"	9.6"	10.4"
Weight from [lbs]	33	66	77	154	154	265	287	551	573	772	1543
Width [inch]	7.9"	7.9"	7.9"	11.4"	10.6"	13.4"	13.4"	17.7"	17.7"	23.2"	29.5"
Length [inch]	9.0"	11.8"	11.8"	16.9"	16.9"	18.9"	18.9"	23.6"	23.6"	26.4"	29.5"
Lifting hook [lbs]	1650	2200	2200	6600	6600	11000	11000	17700	17700	22000	33000
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 [inch]	1.0-1.4"	1.4–1.8"	1.4–2.0"	1.8–2.4"	1.8–2.4"	2.4-3.1"	2.4-3.1"	2.4-3.1"	2.7-3.5"	3.5-4.3"	3.5–5.1"
Width dipper arm [inch]	4.9	4.7-6.3	6.3–7.8	5.9-8.9	5.9–9.0	9.9–12.0	11.8–13.0	11.0–15.7	13.8–17.0	Max 18.9	Max 20.0
Pin distance [cc] [inch]	3.3–5.9	6.3–10.6	9.2–13.6	8.6–14.4	8.6–14.4	13.0–18.1	15.7–18.1	10.6–19.0	18.5–22.2	15.2–23.3	19.7–24.8

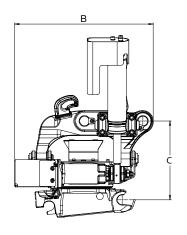
SQ COUPLER								
Machine Weight [lbs]	11000-28660	26500-41000	26500-41000	30900-48500	39700-72700	39700-72700	55100-94800	88200-154300
MODEL	WBSQ50	WBSQ60-4	WBSQ60-5	WBSQ65	WBSQ70	WBSQ70/55	WBSQ80	WBSQ90
Dimensions [same as]	S50	S60	S60		S70		S80	S90
Weight [lbs]	100	135	135	190	245	310	430	750
Couplings	5	4	5	5	5	6	6	9
3/8"	2	-	2 *	ı	-	-	-	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							

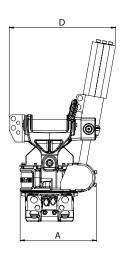
^{* 1/4&}quot; Option in Germany

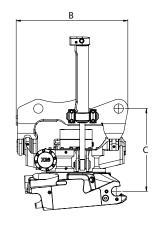
TILTROTATOR (VALUE WITH	GRIPPER	3)								
Machine Weight [lbs]	2200-4400	4400-8800	8800-13200	11000-15400	15400-26500	22000-30900	26500-39700	35300-44100	39700-57300	55100-7270
MODEL	X02	X04	X06	X07	X12	X14	X18	X20	X26	X32
Upper coupler	DF S30	DF \$40 HS03	DF S40 HS03	DF S40 S45 S50	DF S45 S50 SQ60-5 HS08	DF \$45 \$50 \$Q50	DF S60 SQ60-5 HS10	DF S60 SQ60-5 SQ65* HS10	DF S70 SQ70 SQ70/55 HS21	DF \$70 \$Q70 \$Q70/55 \$80 \$Q80
Attachment coupler Dedicated (Not all can be combined with all upper couplers)	S30	S40 HS03 CW05	S40 HS03 CW05	\$40 \$45 \$50 H\$08 CW10	S45 S50 SQ50 HS08 CW10	\$45 \$50 \$Q50	S60 SQ60-5 HS10 CW20	\$60 \$Q60-5 \$Q65* HS10 CW20	\$70 \$Q70 \$70/55 \$Q70/55 HS21 CW30	\$70 \$Q70 \$70/55 \$Q70/55 CW40 \$80 \$Q80
Max tilt angle [Degrees]	± 40	± 45	± 45	± 45	± 45	± 45	± 45	± 45	± 45	± 45
Req hydraulic oil flow [gpm]	4–	6–11	6–11	8–13	18–24	21–26	21–26	26–32	26–32	32–37
Max pressure [psi]	2538	3050	3050	3050	3050	3050	3050	3050	3050	3050
Hydraulic extra functions	1	1(0)	1(0)	1(0)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)
A. Width [inch]	16.9"	12.4" (18.1")	12.4" (18.1")	14.4" (22.4")	22.3" (22.7")	24.3" (25.0")	24.3" (28.2")	27.2" (28.2")	27.2" (31.8")	28.7" (31.8")
B. Length [inch]	10.2"	20.7" (25.3")	20.8" (25.3")	24.3" (31.1")	24.6" (30.1")	28.5" (32.0")	28.6" (37.5")	32.1" (39.5")	32.6" (43.9")	34.3" (45.9")
C. Building height from [inch]	10.2"	13.5"	13.5"	15.6"	16.7"	17.9"	18.0"	20"	21.1"	24.6"
D. Width cylinders [inch]	12.8"	19.6"	19.6"	20.1"	26.6"	27.0"	29.0"	28.9"	32.5"	36.9"
Weight from [lbs]	132	254 (333)	298 (377)	430 (553)	628 (767)	838 (977)	882 (1130)	981 (1228)	1257 (1515)	1852 (2110)
Gripper reach [inch]	-	(16.7")	(16.7")	(20.2")	(20.0")	(20.0")	(32.3")	(32.3")	(37.8")	(37.8")
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

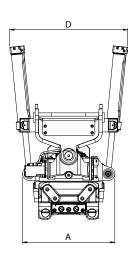
All dimensions are depending on configuration.

Technical specifications









^{* 39600-48500} lbs

MULTI GRAPPLE					
Machine Weight [lbs]	2200-4400	6600–13200	13200–26500	17700–35300	41900–57300
MODEL	MG12	MG20	MG25	MG32	MG40
Load area [in²]	90	180	180	240	300
Gripper reach [inch]	79"	54"	59"	71"	76"
Gripper reach, smallest object [inch]	3.3"	2.1"	3.8"	3.8"	4.2"
Max Load [lbs]	2200	6600	11000	13200	15400
Weight [lbs]	121	423	688	904	1237
Gripper force [kN] [tip against tip]	5.9	12.5	17	21	25
Height [tip against tip] [inch/ft]	24.3"	33.2"	36.2"	3.6'	3.7'
Height [max open] [inch]	22"	29.4"	30.7"	37.4"	37.1"
Width [inch]	11.6	19.8	23.4	26.0	27.2
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	

STONE AND SORTING GRAPPLE					
Machine Weight [lbs]	13200-26500	17700-35300	22000-44100	35300-57300	
MODEL	SG20	SG25	SG32	SG40	
Load area [in²]	180	1180	240	300	
Gripper reach [inch]	49"	67"	72"	86"	
Max Load [lbs]	6615	13227	15432	17363	
Weight [lbs]	437	831	1191	1581	
Gripper force [kN] [tip against tip]	10	15	20	25	
Height [tip against tip] [inch/ft]	25.8"	33.4"	3.3'	3.7'	
Height [max open] [inch]	19.7"	24.0"	34.0"	32.5"	
Width [inch]	20.4	23.6	25.8	27.6	
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 [lbs]	13200-26500	17700-35300	22000-44100	35300-57300			
MODEL	FG20-5/ FG20-7	FG25-5/	FG32-5/ FG32-7	FG40-5/ FG40-7			
Load area [in²]	310	387,5	496	620			
Gripper reach [inch]	54"	61"	72"	77"			
Max Load [lbs]	6615	13227	15432	17363			
Weight [lbs]	483/534	897/968	1389/1499	1596/1731			
Gripper force [kN] [tip against tip]	10	15	20	25			
Height [tip against tip] [inch/ft]	32.2"	34.5"	3.4'	3.5'			
Height [max open] [inch]	27.0"	27.6"	34.0"	34.1"			
Width [inch]	19.8"	26.5"	27.5"	29.7"			
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	\$50, \$60, \$70, \$Q60-4, \$Q60-5, \$Q65, \$Q70, \$Q70/55, CW40, HS21	\$60, \$70, \$Q60-4, \$Q60-5, \$Q65, \$Q70, \$Q70/55, CW30, H\$10			

Grapples = Max operating pressure [psi] 3600

COMPACTOR/VIBRO						
Machine Weight [lbs]	4400–13200	11000–26500	22000–48500	35300–66100		
MODEL	HC20	HC40	HC60	HC90		
Vibration Force [kN]	20	40	60	90		
Vibration Frequency [Hz]	38	38	38	38		
Weight [lbs]	551	853	1367	2136		
Length [inch]	27.6"	33.5"	37.8"	40.8"		
Width [inch]	16.1"	24.0"	27.6"	31.5"		
Height [inch]	19.4"	21.3"	23.4"	25.3"		
Load Area [inch²]	418.5	806	1038.5	1519		
Hydraulic Pressure [rec/max] [psi]	2200/3600	2200/3600	2200/3600	2200/3600		
Hydraulic Flow [gpm]	7.9–13.2	15.9–21.1	23.8–31.8	31.8–37.0		
Bracket	\$40, \$45, \$50, \$60, \$Q50, \$Q60-4, \$Q60-5, CW05, CW10, HS03, HS08	S40, S45, S50, S60, SQ50, SQ60-4, SQ60-5, CW10, HS08	\$60, \$70, \$Q60-4, \$Q60-5, \$Q65, \$Q70, \$Q70/55, CW30, HS10	S70, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, SQ80, CW40, HS21		

SWEEPER									
MODEL	SW1000	SW2000							
Width [ft]	3'-2"	4'-9"	6'-5"						
Motor	Dual Motor Direct Drive	Dual Motor Direct Drive	Dual Motor Direct Drive						
Mudflap	Standard	Standard	Standard						
Flow requirements [gpm]	10.6–34.3	10.6–34.3	10.6–34.3						
Integrated parking stand	Yes	Yes	Yes						
Brush / Option	Bee	Bee-Line / Twisted core cartridge brushes							
Bracket	S45, S50, S60, S65, S70/55, S	SQ50, SQ60, SQ65, SQ70, SQ70/	55, HS08, HS10, CW10, CW20						
Weight from [lbs]	507	617	771						

BRUSH		
MODEL	FB1800	FB2500
Width [ft]	5'-9"	8'-1"
Bracket	S40, S45, S50, S60, S70	S60, S70
Weight from [lbs]	507	617

GRADING BEAM					
MODEL	GR1250	GR1500	GR2000	GR2500	GR3000
Width [ft]	4'-1"	4'-9"	6'-5"	8'-2"	9'-8"
Weight [lbs]	463	882	1058	1235	1411
Bracket	\$40, \$45, H\$03, CW05	S40, S45, S50, HS03, CW05	S45, S50, S60, S65, S70/55, SQ65, SQ70/55, HS08, CW10, CW20	\$60, \$65, \$70, \$70/55, \$Q65, \$Q70/55, H\$10, H\$21, \$CW20, \$CW30-40\$	S60, S65, S70, S70/55, SQ65, SQ70/55, HS10, CW20, CW30-40

HYDRAULIC PALLET FORK	
MODEL	HPF5000
Width [ft]	4'-11"
Lifting capacity [lbs]	11000
Bracket	SQ50, S60, SQ60-4, SQ60-5, SQ65, SQ70, SQ70/55, SQ80

BUCKETS AND WORK TOOLS																								
Machine Weight [lbs]	0 -4400	0–4	400	2200-	-6600		4400-	-8800		6600-	11000		8800-	13200		132	200–17	700	1	7700-				
Bracket	S30*	S3	80*	S3	30*		S40,	HS03		S40, HS03		S40, HS03				S45,	S50, H	S45, S50,						
Grading bucket Volume [yd²] [ISO 7451] Volume [yd²] [SAE J296] Width [inch/ft] Weight [lbs]	GB08 0.05 0.07 27.6" 88.8	GB1 0.08 0.10 31.5" 110.2	GB1 0.10 0.13 3'-2" 143.3	GB2 0.12 0.16 35.4" 143.3	2 0.13 0. 6 0.18 0. 4" 3'-2" 35		GB2 GB2 GB3 0.12 0.13 0.2 0.16 0.18 0.24 35.4" 3'-2" 3'-2" 154.3 176.3 220.4		GB4 GB5 0.26 0.33 0.33 0.42 3'-6" 3'-9" 297.6 374.8		0.33 0.39 0.42 0.5 3'-9" 4'-2"			GB6 0.39 0.5 4'-2" 462.9	GB9 0.47 0.59 4'-2" 540.1									
Digging bucket with teeth Volume [yd] [ISO 7451] Volume [yd] [SAE J296] Width [inch/ft] Weight [lbs]			.7"	0.0 0.1 17 12	11 .7"	DB2T DB2T 0.05 0.09 0.08 0.11 11.8" 17.2" 110.2 132.2		0.13 0.16 23.6" 165.3	0.13 0.16 19.7" 187.4	0.18 0.24 23.6" 242.5		0.25 0.27 0.31 0.34 27.6" 29.5" 297.6 319.6		0.34 0.43 35.4" 352.7		0.34 0.43 35.4"		0.34 0.43 35.4"		0.22 0.28 23.6" 319.6	0.27 0.35 27.6" 341.7	0.37 0.46 35.4" 418.9	0.21 0.27 17.7" 407.8	0.27 0.35 23.6" 462.9
Digging bucket Volume [yd²] [ISO 7451] Volume [yd²] [SAE J296] Width [inch/ft] Weight [lbs]	30 0.05 15.7" 66.1	0.0 5 15	05 5 .7"	7 8 17	DB2 70 85 17.7" 99.2		70 85 17.7" 110.2	100 125 23.6" 143.3	100 120 19.7" 165.3	14 18 23	30	190 240 27.6" 275.6	210 260 29.5" 297.6	26		DB6 170 215 23.6" 297.6	DB6 210 265 27.6" 319.6	DB6 0.37 355 35.4" 396.8	DB9 160 205 17.7" 396.8	DB9 210 265 23.6" 440.9				
Cable/Trench bucket Volume [yd³] [ISO 7451] Volume [yd³] [SAE J296] Width [inch] Weight [lbs]	-	0.0 0.0 9.0 55	03 04 4"	0.0 0.0 11 66	05 .4"	CB3 0.07 0.09 11.8" 121.2		0. 0. 15.7	33C 07 09 "/7.9" 2.3	0.07 0.09 11.8"	0.07 0.09 15.7/7.9" 132.3	0.08 0.10 11.8" 154.3	0.12 0.16 15.7" 176.4	CB5 0.13 0.18 17.7" 187.4	CB6 0.13 0.18 15.7" 209.4	0.10 0.14 15/11.8" 242.5	CB6 0.13 0.18 15.7" 242.5	CB6 0.14 0.19 17.7" 253.5	0. 0. 15.7' 26	10 14 '/7.8"				
Cable/Trench bucket with teeth Volume [yd³] [ISO 7451] Volume [yd³] [SAE J296] Width [inch] Weight [lbs]	-	-	-	0.0 0.0 11 88	04 05 .4"	0.1 0.1 17.		CB5T 0.13 0.18 17.7" 209.4		0.1 0.1 17 209	13 18 .7"	0.08 0.10 11.8" 165.3		0.13 0.18 17.7" 209.4		CB6TC 0.10 0.14 15.0"/11.8" 242.5		0.14 0.19 17.7" 264.5	0.20 0.26 15.7" 496.0					
Utility bucket Volume [yd²] [ISO 7451] Volume [yd²] [SAE J296]] Width [inch/ft] Weight [lbs]	-	-	-	-	-	-		-	-		-	-		-				-						
V-ditch bucket Volume [yd³] [ISO 7451] Width [inch/ft] Weight [lbs]	-	-	-	0.° 35.4" 143	12 '/7.9"		VI 0. 3'-6" 26	18 /7.9"		0.2 3'-9" 429	26	0. 3'-9'	VB4 VB6 0.26 0.31 3'-9"/7.9" 4'-1"/11.8" 429.9 463.0		31 /11.8"	VB8 0.52 5'-5"/11.8" 639.3			VB8 0.52 5'-5"/11.8" 639.3					
Sorting bucket Volume [yd] Width [inch/ft] Weight [ibs]	-	-	-	0.	.4"		90. 35 198	17 .4"		SOB4 SOB4 0.26 0.26 3'-2" 3'-2" 308.6 308.6		26 -2"	SOB6 0.39 3'-9" 363.8		SOB8 0.48 4'-2" 639.3			SOB8 0.48 4'-2" 639.3						
Skeleton bucket Volume [yd³] Width [inch/ft] Weight [lbs]	-	-	-	0.0	(B2 08 .7" 0.2	SKB4 0.17 23.6" 187.4				9.1 23.6 187.		17 5.6"			31.5" 374.8		SKB 0.48 3'-2 661.							
Asphalt cutter Diameter [inch] Thickness [inch] Weight [lbs]	-	-	-	-	-	AC 15.7 0.3 110		75" 31"		15. 0.3	C5 75" 31" 0.2		AC5 15.75" 0.31" 110.2		AC10 18.50" 0.39" 154.3				50" 39"					
Pallet fork Lifting capacity [lbs] Width [ft] Weight [lbs]	-	-	-	-	-		PF2 44 3'- 31!	-9"		PF2000 4400 3'-9" 319.6		44 3'-		PF2000 4400 3'-9" 319.6		PF2500 5500 3'-9" 451.9			5500 3'-9"					
Ripper Length [inch/ft] Weight [lbs]	-	RP 26. 66		RP 26. 66	38"		RP 27.5 220	95"		RP40 27.95" 220.5		RP40 27.95" 220.5				RF	245/RP 33.86" 418.9	RP45/RP50 33.86" 418.9						

^{*} S30/180

26500	24300-28600	28600-	-33000	33000-35300	3530	0–39700	3970	0–48500	48500	-72700	61800-94800						
HS08	S45, S50, HS08, S60	S60, I	HS10	S60, S65, HS10), S65, IS10	S7), S70, 0-55, S21		S70-55, S21		S80					
GB9	GB12 GB12	GB	14	GB15	G	GB17			GB25	GB30	GB30	GB35	GB40				
0.52	0.65 0.72	0.8	0.95		1.1		.33	1.67	2.0		2.42	2.98					
0.65 4'-6"	0.82 0.9 4'-6" 4'-9"	1.0 4'-		1.19 5'-2"		1.39 5'-5"		.66 '-9"	2.09 6'-2"	2.5 6'-5"		3.02 7'-2"	3.73 7'-8"				
551.1	771.6 914.9	130	0.7	1455.0		631.4	21	38.4		3417.1	3527.3	232.8	4828.0				
DB9T DB9T	DB12T DB12T DB12T	DB13T DB14T	DB14T DB14T DB14T	DB15T DB15T	DB17T DB17	T DB17T DB	17T DB20	T DB20T	DB25T	DB30T		B30T					
0.34 0.46	0.33 0.48 0.56	0.60 0.29	0.35 0.67 0.90	0.77 1.16	0.43 0.75				1.44	1.63		1.63					
0.43 0.58 27.6" 35.4"	0.42 0.61 0.71 23.6" 31.5" 35.4"	0.75 0.36 35.4" 17.7"	0.46 0.86 1.12 39.3" 3'-1" 3'-9"	0.96 1.45 3'-2" 4'-6"	0.56 0.94 4'-6" 35.4				1.79 4'-1"	2.04		2.04 4'-2"					
518.0 628.3			804.7 1135.4 1388.9					2 2314.8				483.2					
DB9 DB9	DB12 DB12 DB12	DB13 DB14	DB14 DB14	DB15	DB17 DB1	7 DB17 DE	17 D	B20	DE	325	ı	DB30					
0.34 0.46	0.33 0.48 0.56	0.60 0.29	0.35 0.67	0.77	0.43 0.75			.94		.44		1.63					
0.43 0.58 27.6" 35.4"	0.42 0.61 0.71 23.6" 31.5" 35.4"	0.75 0.36 35.4" 17.7"	0.46 0.86 23.6" 37.4"	0.96 3'-3"	0.56 0.94 23.6" 35.4			.19 '-4"		.79 -1"		2.04					
27.6" 35.4" 496.0 606.2		35.4" 17.7" 870.8 694.4		1113.3	903.9 1212.			-4 85.7		- i 14.8	3	4.3' 218.7					
СВ9	CB12	CB15	CB15C	CB15C		B17		B20		CB30		CB30					
0.16	0.20	0.30	0.18	0.18		0.35		.43	0.56	0.77		0.77					
0.22	0.26	0.40	0.25	0.25	0.48			.58	0.76	1.05		1.05					
15.7"	15.7" 463.0	19.7"	18.9"/11.8" 584.2	18.9"/11.8" 584.2				3.2"	25.6"	31.5"		31.5" 851.8					
297.6		727.5					1212.5 CB15T		1741.6	1001.0							
CB12T 0.20	CB12T 0.20	CB1 0.3		CB15T 0.30	C		.30										
0.26	0.26	0.4		0.40	0.30 0.40			0.40		_		_					
15.7"	15.7"	19.		19.7"	19.7"			9.7"									
496.0	496.0	804		804.7		04.7		04.7									
		UB15	UB15	UB15													
_	_	0.47 0.65	0.47 0.65	0.47 0.65	0.82			.07	1.12	1.03		1.03 1.41					
		27.5"	27.5"	27.5"		1.5"		5.4"	35.4"	3'-2"		3'-2"					
		925.9	925.9	925.9	11	102.3	12	1212.5 1455.0 1675			1	675.5					
VB8	VB8	VB		VB15		B15		B20		320							
0.52 5'-5"/11.8"	0.52 5'-5"/11.8"	0.6 5'-7"/		0.65 5'-7"/11.8").65 "/11.8"		.78 "/13.8"		.78 /13.8"		-					
639.3	639.3	859		859.8		59.8		6'-5"/13.8" 6'-5"/13.8" 1256.6 1256.6									
SOB8	SOB8	SOB14	SOB15	SOB15	S	OB17	so)B20	so	S	OB25						
0.48	0.48	0.85	0.98	0.98	1.18		1.44							.83		1.83	
4'-2"	4'-2"	5'-2"	5'-2"	5'-2"	1.0		'-5"		-5"	6'-5"							
639.3	639.3	970.0 SKE	1388.9	1388.9	15	20	28.2	23	14.8	2491.2							
SKB8 0.48	SKB8 0.48	0.8															
3'-2"	3'-2"	4'-		-		-		-		-	-						
661.4	661.4	116	8.4														
AC10	AC10	AC		AC15	A		AC20		20								
18.50"	18.50"	18.5		18.50" 0.39"		3.50"		3.50"		.50"		-					
0.39" 154.3	0.39" 154.3		0.39" 220.5			.39" 20.5		.39" 52.7		39" 52.7							
PF2500	PF2500	PF50		220.5 PF5000		5000		5000		5000							
5500	5500	110		11000		1000		1000		000							
3'-9"	3'-9"	3'-		3'-9"		8'-9"		'-9"		-9"	-						
451.9	451.9	727		727.5		27.5		31.8		1.8							
RP45/RP50	RP45/RP50	RP: 3'-		RP60		1 P60 3'-4"		P70		P70							
33.86" 418.9	33.86" 418.9	749		3'-4" 749.6		49.6		'-1" 10.9		-1" 10.9							

Not all products are available in all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

BOWERED BY STEELWRIST



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.

Read more at www.opens.org

Werk-Brau

2800 Fostoria Ave Findlay, OH 45840

Toll Free: 1800.537.9561

WWW.WERK-BRAU.COM