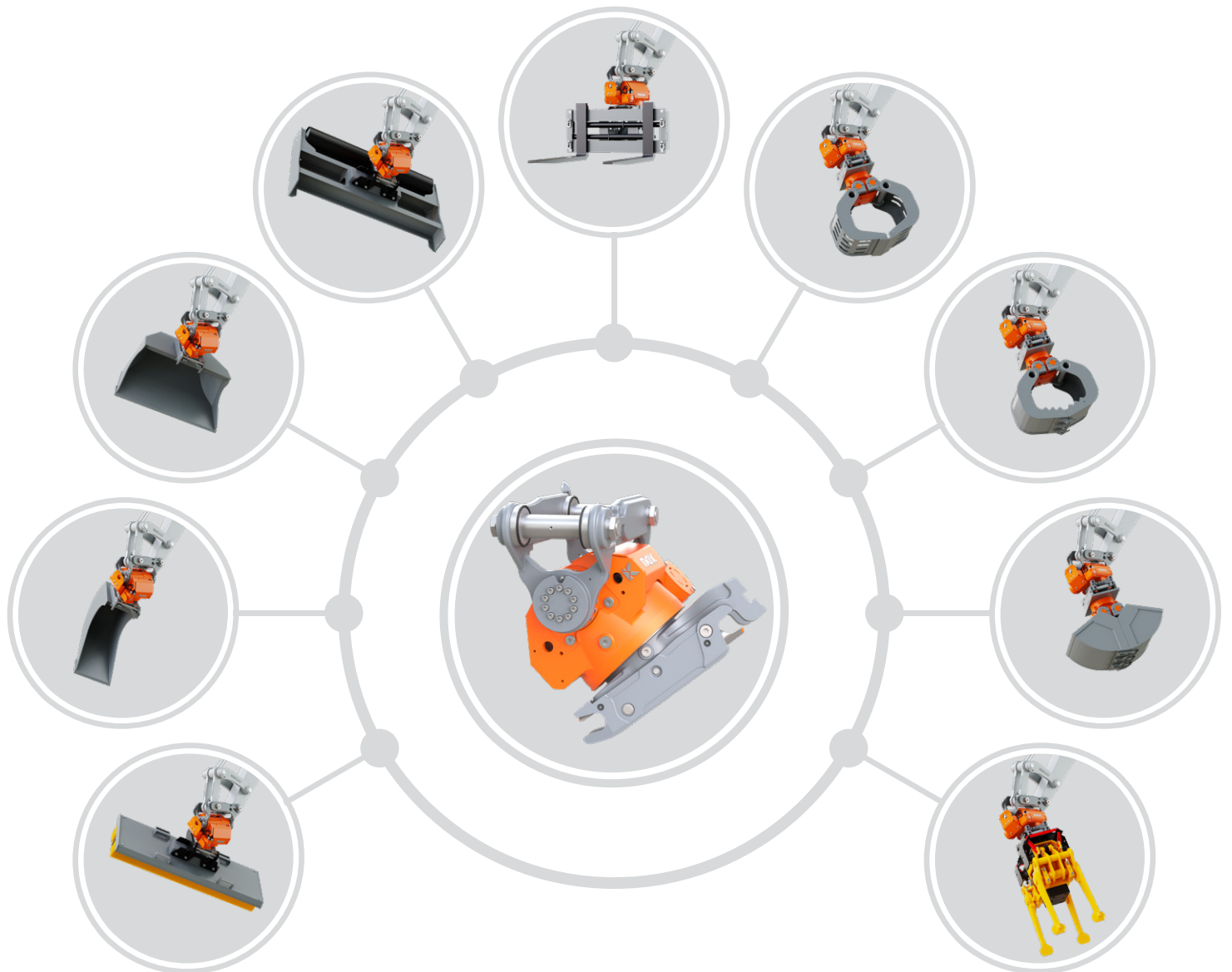




2023-V3



noX Tiltrotators and Accessories



noX TILTROTATORS

With our Tiltrotator, your attachments can be rotated by 360° continuously and tilted by up to 50° to both sides. Therefore, the efficiency of your machine will be increased dramatically as time and resources will be saved.

FOUR FACTS ABOUT THE USE OF TILTROTATORS:

PRODUCTIVITY AND PROFITABILITY

MANAGE THE SAME AMOUNT OF WORK IN LESS TIME.

SAFETY

THE NOX TILTROTATOR COMPLIES WITH ALL CURRENT SAFETY REGULATIONS AND HELPS THE OPERATOR AND SURROUNDING WORKFORCE TO ACHIEVE AN ACCIDENT-FREE ENVIRONMENT.

VERSATILITY AND FLEXIBILITY

INCREASE THE USE OF YOUR MACHINE DRAMATICALLY AND ACCEPT MORE JOBS. ESPECIALLY IN CONJUNCTION WITH THE NOX.

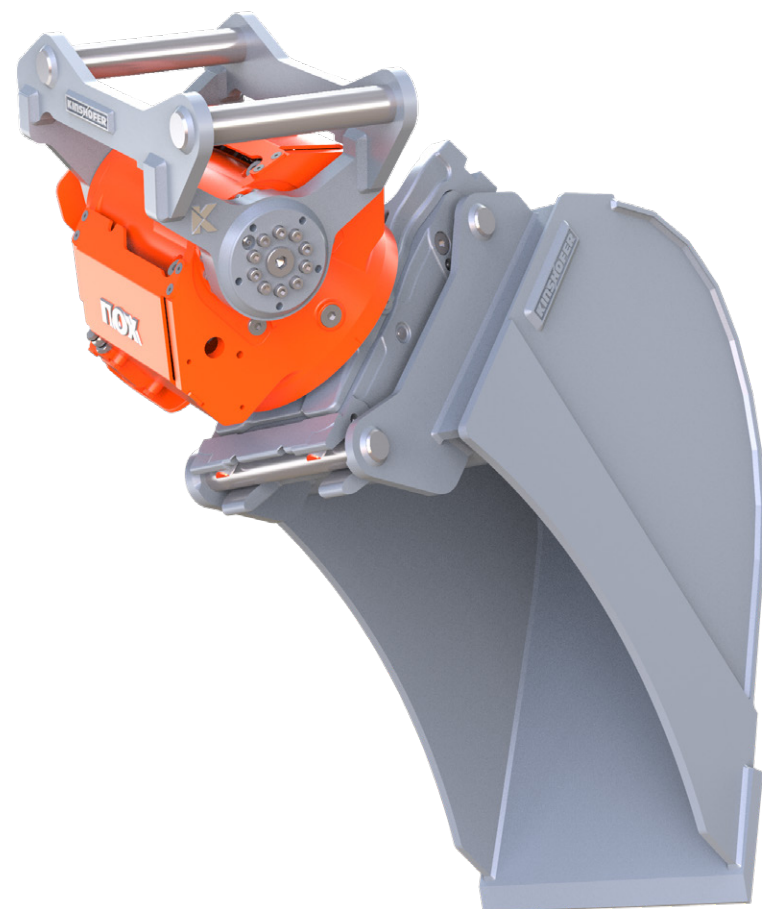
READY FOR THE FUTURE

THE NOX TILTROTATOR COMES GPS-READY WITH ITS VERY MODERN NOXPROP+ CONTROL SYSTEM. THE MOST COMMON 3D MACHINE CONTROL SYSTEMS CAN BE IMPLEMENTED. EVEN RETROACTIVELY.



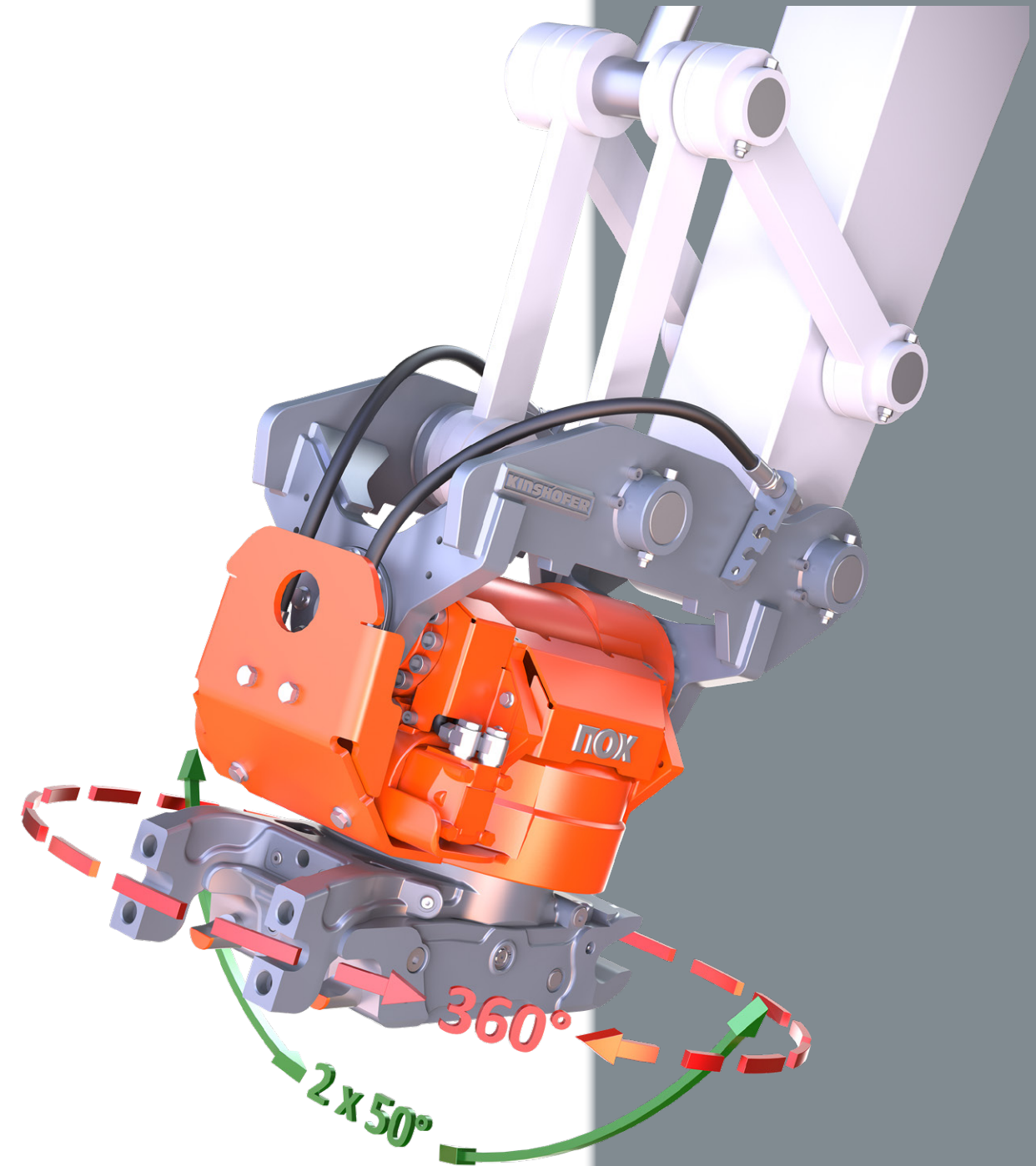
2 YEARS WARRANTY
NOX TILTROTATORS

It is our goal that you can always rely on your attachment and make you feel confident of its quality and longevity. KINSHOFER stands for attachments of highest quality. All our employees and our quality management are committed to this quality every day. We are confident of the quality level we provide and therefore grant a 2-year-standard-warranty. Enjoy working with them and experience and create quality.



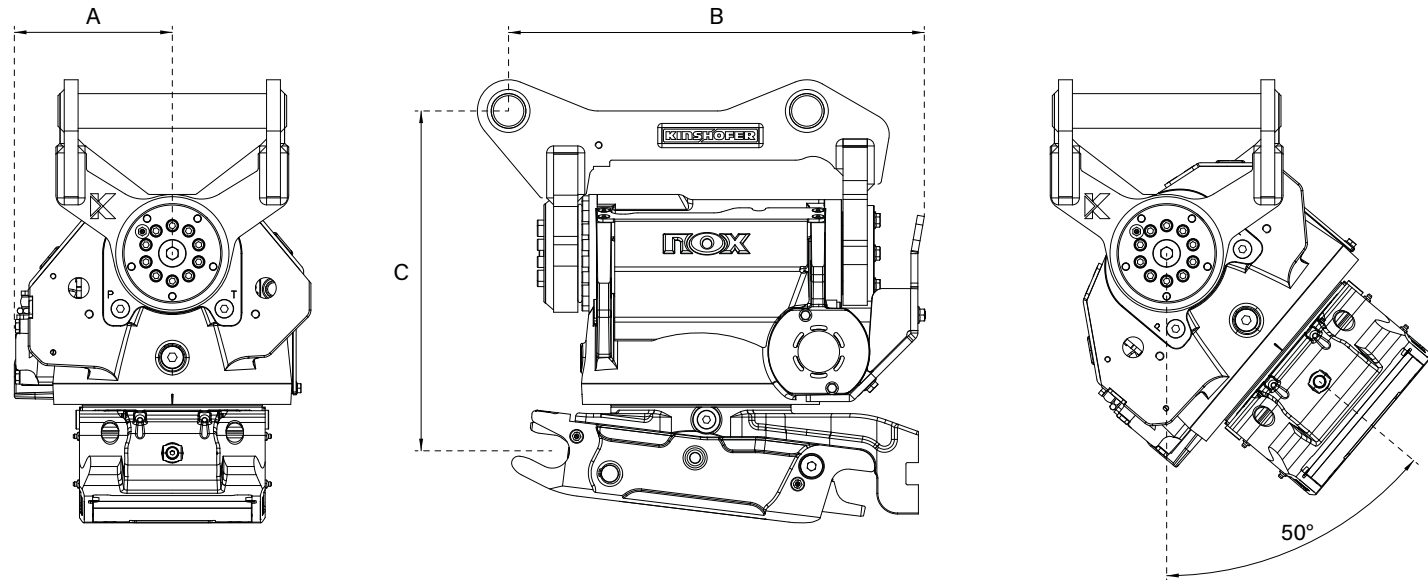
Turn efficiency in your direction!

With using the NOX Tiltrotator, you are not only reducing the need for repositioning your excavator and thus sparing the ground from damage (especially when it comes to landscaping tasks), but you will also speed up your work. The attachments can be positioned within the complete reach of the boom to work around obstacles. Fast and easy levelling works with a levelling bar can be realized without repositioning the excavator. Precise setting of curbstones, dosed and accurate filling of trenches with a bucket turned by 90° as well as the handling of different kinds of materials in narrow areas are no problem with the NOX Tiltrotator.



NOX Tiltrotators

Experience and innovation have led to one of the most advanced tools for excavators: the NOX Tiltrotator. 360° continuous rotation and a tilt angle of up to 2 x 50° make it a universal joint, allowing for a whole new range of applications. Combined with a quick change system and various attachments this means highest efficiency at any construction site.



TR45NOX



TR07NOX



TR11NOX



TR14NOX



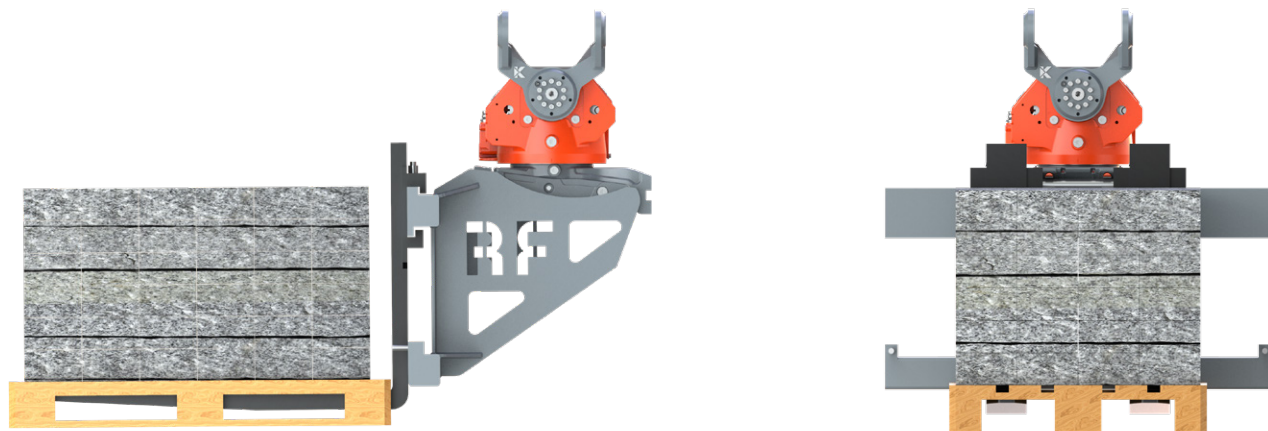
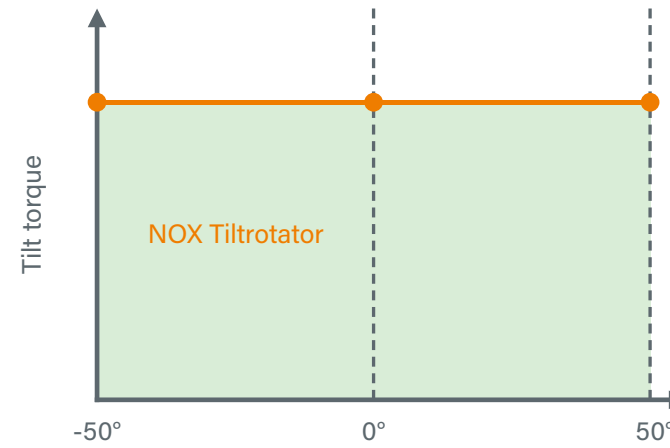
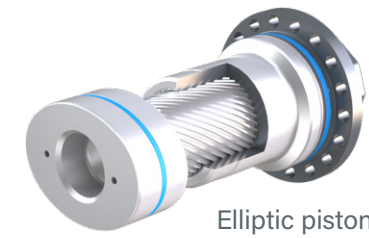
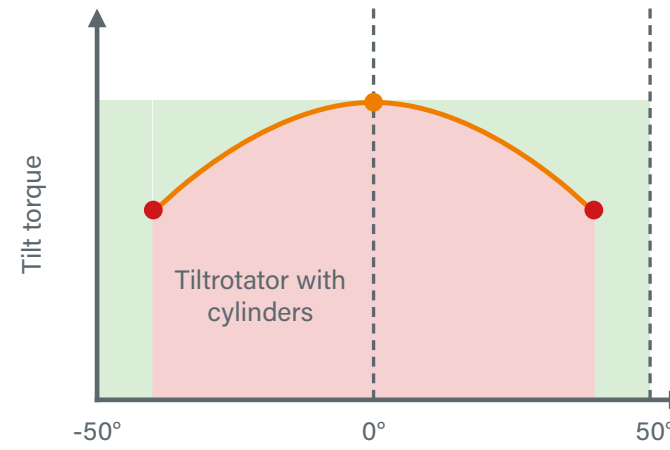
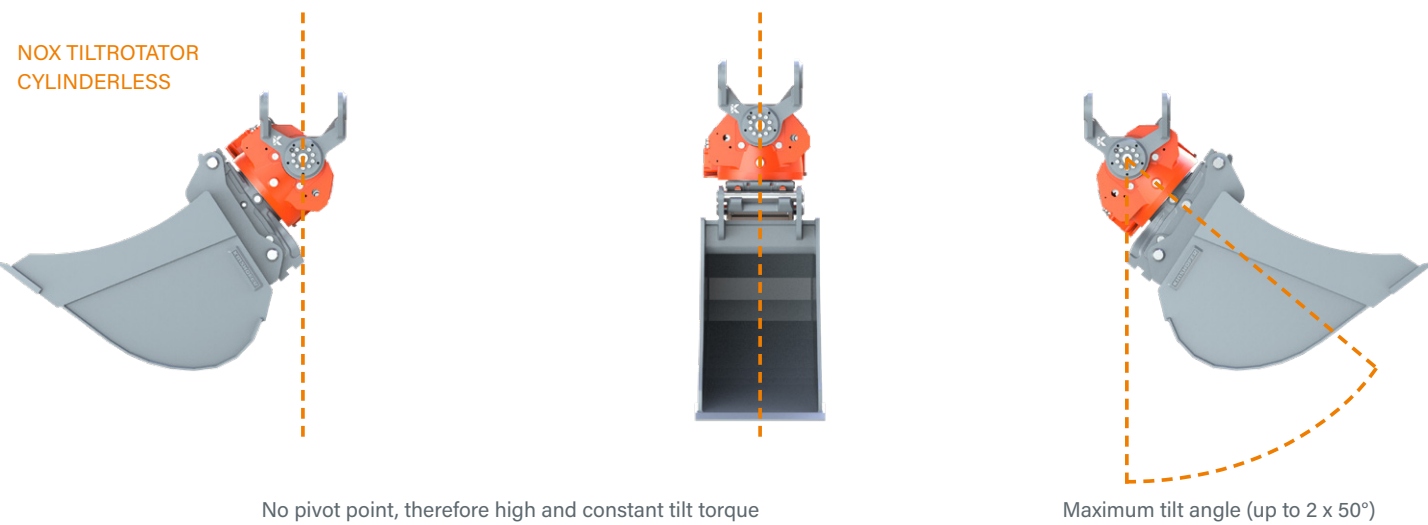
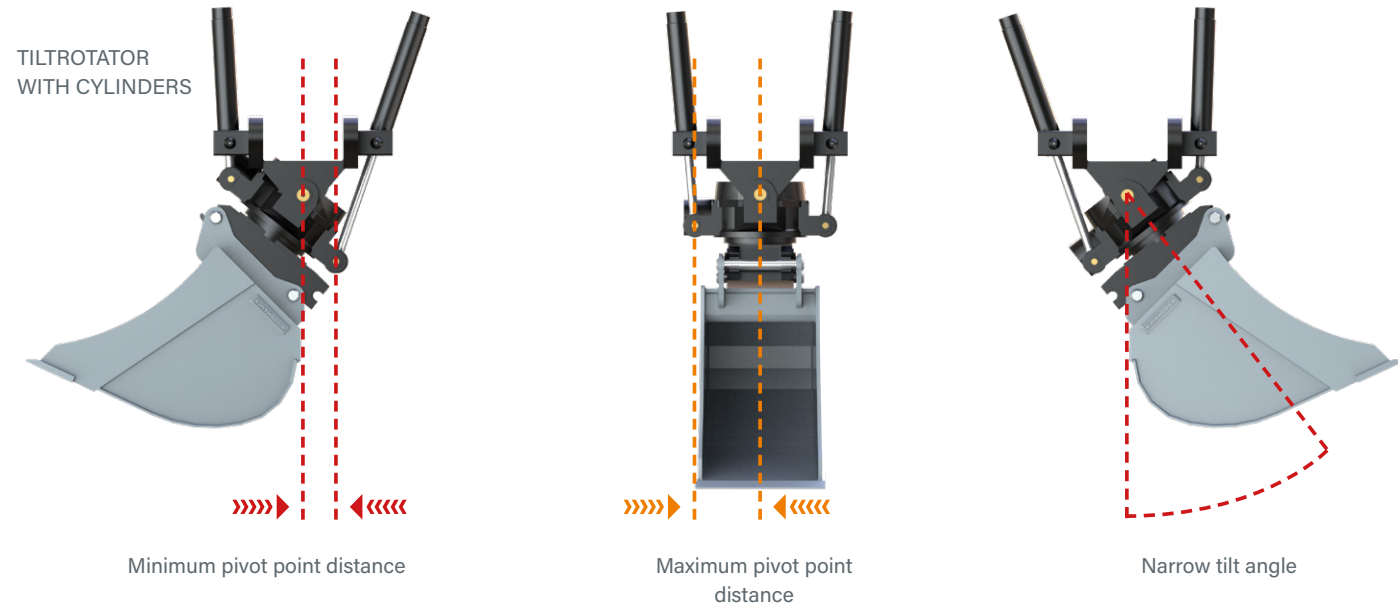
TR19NOX



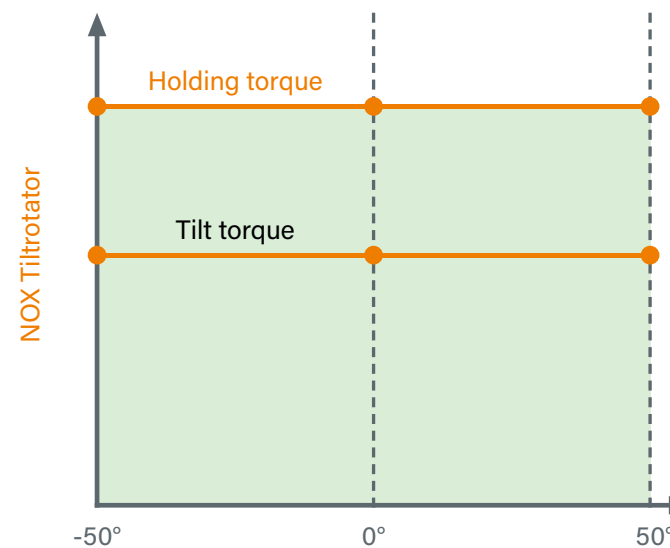
TR25NOX

	TR45NOX	TR07NOX	TR11NOX	TR14NOX	TR19NOX	TR25NOX
Operating weight (t / lbs)	2.5 - 4.5 / 5,500 - 9,900	4 - 7 / 8,800 - 15,400	6 - 11 / 13,200 - 24,200	10 - 14 / 22,000 - 30,800	14 - 19 / 30,800 - 41,800	19 - 25 / 41,800 - 55,000
Weight* (from kg / lbs)	150 / 330	200 / 440	320 / 704	485 / 1,067	580 / 1,267	860 / 1,892
Width A* (from mm / in)	190 / 7.4	205 / 8.1	215 / 8.5	240 / 9.5	230 / 9.1	260 / 10.3
Length B* (from mm / in)	435 / 17.1	460 / 18.1	580 / 22.8	610 / 24.0	645 / 25.4	845 / 33.3
Height C* (from mm / in)	380 / 14.9	420 / 16.5	475 / 18.7	565 / 22.2	580 / 22.8	650 / 25.6
Recomm. bucket width max. (mm / in)	1,100 / 43.3	1,100 / 43.3	1,300 / 51.2	1,600 / 63.0	1,700 / 66.9	2,000 / 78.7
Breakout force max. (ISO) (kN / lbf)	40 / 8,800	50 / 11,000	75 / 16,500	110 / 24,200	150 / 33,000	170 / 37,400
Breakout torque max. (kNm / ft. lbs)	29 / 21,388	40 / 29,500	79 / 58,263	145 / 106,938	200 / 147,500	250 / 184,375
Tilt angle	2 x 45°	2 x 50°	2 x 50°	2 x 50°	2 x 50°	2 x 50°
Tilt torque (constant) (kNm / ft. lbs)	6.5 / 4,794	11 / 8,113	16 / 11,800	31 / 22,863	40.5 / 29,869	51.7 / 38,129
Rotation speed	8.5 per min	8.5 per min	8.5 per min	8.5 per min	8.5 per min	8.5 per min
Rotation torque (Nm / ft. lbs)	3,800 / 2,803	4,700 / 3,466	7,500 / 5,531	11,000 / 8,113	12,000 / 8,850	15,000 / 11,063
Hydraulic pressure max. (MPa / psi)	21 / 3,045	25 / 3,625	27 / 3,920	30 / 4,350	30 / 4,350	30 / 4,350
Recomm. pump capacity CSP (l/min) / (GPM)	30-80 7.9-21.1	30-80 7.9-21.1	40-100 10.6-26.4	80-160 21.1-43.3	100-180 26.4-47.6	120-200 31.7-52.8
Recomm. pump capacity DF04/06/10 (l/min) / (GPM)	15 / 32 3.9 / 8.5	15 / 32 3.9 / 8.5	21 / 40 5.6 / 10.5	40 / 45 10.5 / 11.9	60 / 50 16.0 / 13.0	70 / 70 18.5 / 18.5
Electric swivel	-	optional	optional	optional	optional	optional

*Specifications depend on the machine configuration (upper bracket and lower quick coupler)



Pilot check valve ensures a high holding torque



NOX Tilt torque

The cylinderless, extremely flat drive provides for a very low height as well as a narrow width. An elliptic piston generates a high and constant tilt torque thanks to its single gearing. The robust cast housing features a high stability due to a special material alloy, guaranteeing a long life even under the toughest conditions. The extremely rugged and strong drive for difficult tasks has a proper greasing and is thus low-maintenance.

NOX Tilt angle

360° continuous rotation and up to 2 x 50° tilt angle turn your machine into a multifunctional allrounder, increasing the flexibility and efficiency of all your attachments.

NOX Holding torque

The NOX Tiltrotators are equipped with counter-balance valves, providing firm load holding in the desired position.

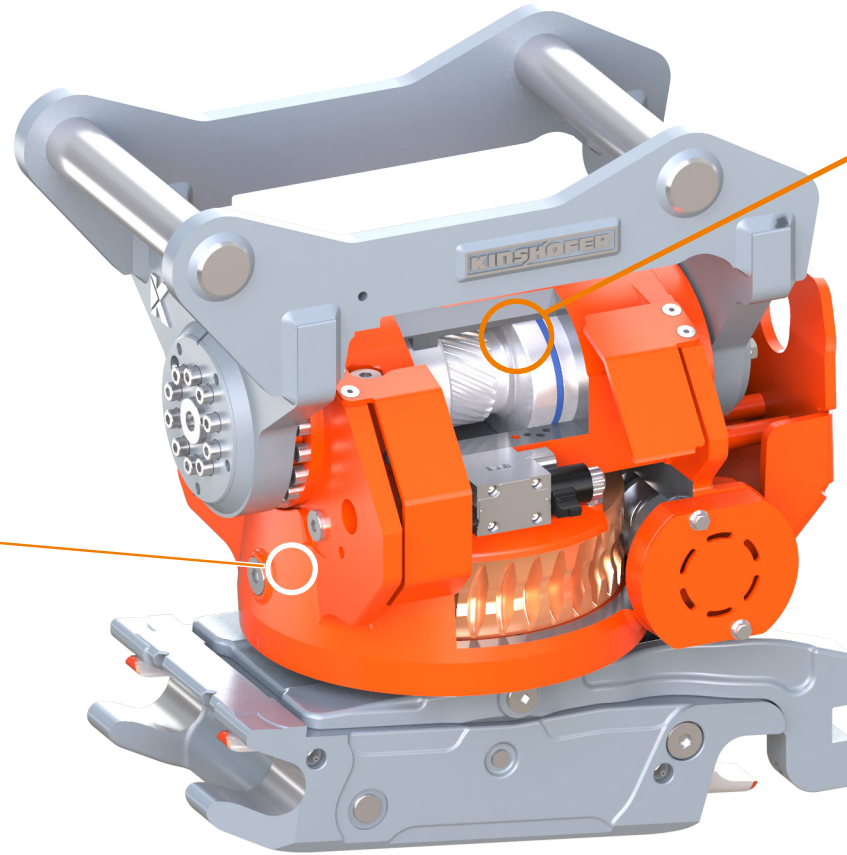
NOX Tiltrotator

SYSTEM: UPPER BRACKET & LOWER QUICK COUPLER

The Tiltrotator can be mounted directly to the excavator arm (direct mount) or it can be "Sandwich" mounted to the excavator by a quick coupler. Preferably, the excavator coupler is the same as the lower quick coupler on the NOX Tiltrotator, but it is not necessarily required. The Tiltrotator can thus be uncoupled and coupled again in no time. The lower quick coupler allows for a safe and fast exchange between attachments. Switching fully hydraulically between hydraulic attachments is no problem with the SmartFlow coupler system.

DESIGN: SELF-CONTAINED UNIT

The compact design with its fully integrated tilt and rotation unit provides highest safety against damage. There are no protruding cylinders or piston rods that can be damaged, increasing the reliability of the NOX. In addition, the low design maintains higher breakout forces of the machine.



SET-UP: COMPACT DESIGN

The cylinderless, extremely low and narrow built drive unit allows for very narrow bucket width, that are usually not wider than the excavator boom. Therefore, digging down in deep trenches becomes possible and very easy.

SAFETY: SAFE WORKING AREA



The increased working radius reduces the need for repositioning your excavator to a minimum. Manual works such as manual digging in the danger zone by a co-worker are not necessary, as these works can be managed from the excavator cabin with the NOX Tiltrotator. The S-Lock quick coupler with front-lock prevents the attachments from falling down unintendedly.

NOX Benefits

FLEXIBLE OPERATION

Fast and uncomplicated response to requirements to be more competitive.

HIGHER SAFETY

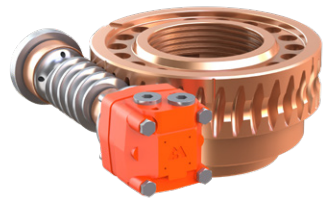
Manual works within the danger area are reduced to a minimum.

LESS WEAR

The compact and extremely robust design without hydraulic cylinders lowers the risk of damages.

HIGHER EFFICIENCY

Working more efficiently saves consumables and labor costs and reduces the required working times. The tasks can thus be finished faster and the wear is kept to a minimum.



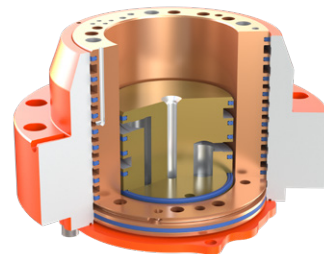
WORM DRIVE

The oversized worm gear absorbs shock loads with ease. The compact diameter and yet high torque ensures a very slim design, hence keeps the overall width of the NOX extremely small.



HOUSING

The robust cast housing features a high stability due to a special material alloy, guaranteeing a long life even under the toughest conditions. The integrated motor cover protects the hydraulic motor of the worm drive from damage from below. The quality of our precision components is ensured by 3D coordinate measuring machines with tactile and optical measuring sensors.



HIGH-FLOW SWIVEL

The optional high-flow swivel provides industry leading flows for attachments that require more flow to operate properly. As an option, an electric rotary unit for quick coupler sensors and attachments with switch valve (mainly in railway construction) can be used.

INTEGRATED GRIPPER TRG

With the integrated gripper you get an additional attachment for handling poles, tubes and curb stones. The gripper is integrated at the lower quick coupler and does not affect the height or the attachment cross-movement.

Gripper module also available as attachment version F-H with different adapter systems.

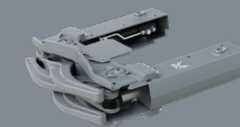


RAILROAD GRIPPER RR-TRG

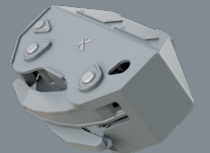
The RR-TRG gripper has been designed especially for heavy duty tasks, such as gripping railroad sleepers or rails. The extremely strong gripper module has been constructed for efficient gripping at a 40° angle. The gripper unit can be removed quickly and easily.



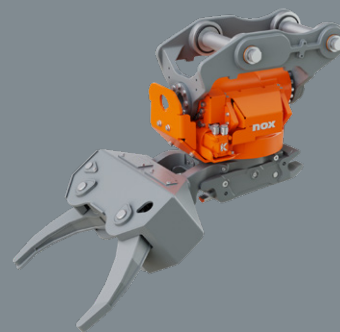
Optional accessories



TRG gripper



RR-TRG gripper



Type	Opening (mm/in)	Closing time (sec.)	Closing force (kN/lbf)	Capacity (kg/lbs)
TRG07	424 / 16.7	1.5	7.5 / 1,650	300 / 660
TRG11	644 / 25.4	1.5	10 / 2,200	500 / 1,100
TRG19	825 / 32.5	3.0	18.5 / 4,070	900 / 1,980
TRG25	1,050 / 41.3	2.0	19.5 / 4,290	1,400 / 3,080

RR-TRG 822 / 32.4 3.9 30,1 / 6,622 5,000 / 11,000
The RR-TRG gripper is only available for TR19NOX and TR25NOX.

NOX Flexibility

MOUNTING TO EXCAVATOR ARM EXCAVATOR BOOM

When mounting the NOX Tiltrotator directly to the excavator dipper, the tiltrotator can use its maximum force.
The "Sandwich" mounted Tiltrotator features a quick coupling adapter at the top to accept pick up by the machine coupler.

DIRECT MOUNT

- > Lower height
- > Higher force transmission



"SANDWICH"-STYLE MOUNT

- > Can be used with different excavators of the same class
- > Can be uncoupled to use attachments that do not require a Tiltrotator



Functional exchange, depending on demands!

As a global company we know that customers of different regions become familiar with certain styles and characteristics of products, including quick couplers.

We constantly improve our designs for higher productivity and greater safety and we also understand that customers may already own existing products which require a compatible coupler solution to keep on using them. We are generally differentiating between three different quick coupler systems:

KINSHOFER QUICK COUPLER SYSTEMS:

FULLY HYDRAULIC QUICK COUPLERS

Fully hydraulic quick couplers connect the worktool mechanically as well as hydraulically without leaving the cabin. No need to connect hoses anymore. KINSHOFER provides its NOX Tiltrotators also with the well-known dedicated OilQuick system or with the Open-S system.

HYDRAULIC QUICK COUPLERS

The hydraulic quick coupler allows for an efficient and safe mounting of the attachment without leaving the cabin. The spring-pretensioned locking pins provide for a force-fit connection without play. Besides the special spring-locking system, the carrier pin (system S-Lock) is also secured mechanically. The attachment cannot get loose.

MECHANIC QUICK COUPLERS

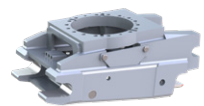
An automatic spring-locking system facilitates the coupling of the tool. By simply turning a socket, the coupler is opened or closed for the tool exchange. This provides a high functional safety; the spring loaded system is over-center locking. Besides the special spring-locking system, the carrier pin is also secured mechanically.

FULLY HYDRAULIC QUICK COUPLER SYSTEM



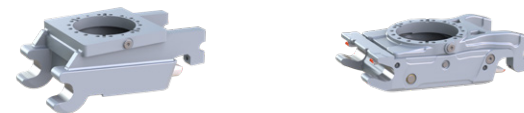
OPEN-S

SYSTEM LIEBHERR



OILQUICK

HYDRAULIC QUICK COUPLER SYSTEM

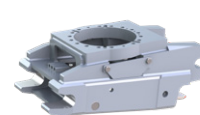


SYSTEM L-LOCK

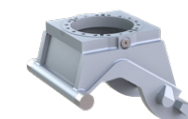
SYSTEM S-LOCK



SYSTEM D-LOCK



OILQUICK



SYSTEM VERACHTERT



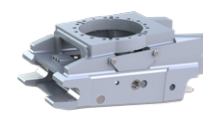
SYSTEM LIEBHERR

MECHANIC QUICK COUPLER SYSTEM



SYSTEM L-LOCK

SYSTEM S-LOCK



OILQUICK



SYSTEM LIEBHERR

NOX Control

NOXProp+ & NOXProp
CSP - CONTROL SYSTEM

Although this control system only requires one hydraulic function from the excavator, all Tiltrotator functions can be used at the same time. Also functions like steering/driving control, boom swing and dozer blade etc. can be controlled optionally. All functions are controlled proportionally and a separate control system is installed at the excavator. The joysticks of the machine will be replaced by new joysticks provided by KINSHOFER.

KEY FEATURES NOXProp+

- ▶ Optimal NOX performance thanks to perfectly adjusted control
- ▶ Bright and high-definition touchscreen
- ▶ Autocalibration
- ▶ Position indicator at the display
- ▶ 4 different user profiles with up to 10 tool profiles (more flexibility)
- ▶ CAN Bus system
- ▶ All main settings can be adjusted directly on the touchscreen, no laptop/smartphone necessary
- ▶ Direct mode: When the NOX is disconnected, it is possible to control the original AUX lines in both directions
- ▶ Connectivity (WiFi, LTE, GPS, Bluetooth)
- ▶ Easy installation
- ▶ Integration with 2D/3D excavation system - NOXGeo
- ▶ BIM-ready



NOXProp+ TOUCHSCREEN

MACHINE REQUIREMENTS FOR CSP - NOXProp+ & NOXProp

- ▶ Single-acting hydraulic circuit (hammer line)
- ▶ Pressure line
- ▶ Tank line (free return directly to tank)



NOXProp CONTROL UNIT

KEY FEATURES NOXProp

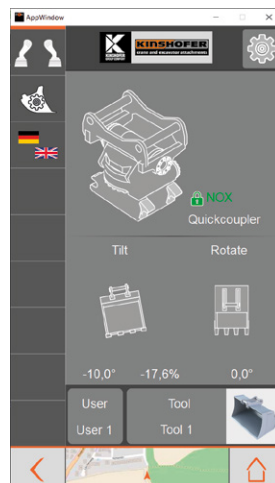
- ▶ All functions can be controlled proportionally
- ▶ All parameters can be adjusted individually with laptop
- ▶ 4 different user profiles with up to 10 tool profiles (more flexibility)
- ▶ Direct mode: When the NOX is disconnected, it is possible to control the original AUX lines in both directions.



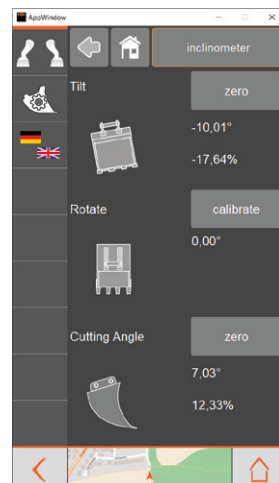
BG-MODULE CONNECTOR

TOUCHSCREEN: ERGONOMIC CONTROL UNIT

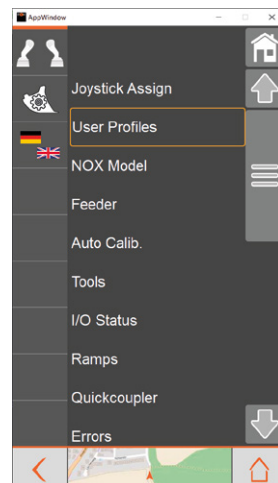
- ▶ Highly bright display - legible even at direct sunlight
- ▶ Easy switch between different profiles
- ▶ Locking/unlocking of quick coupler
- ▶ Sensor control of the quick coupler
- ▶ Tool profile settings
- ▶ Adjustment of single function speed
- ▶ Reliable ram mount



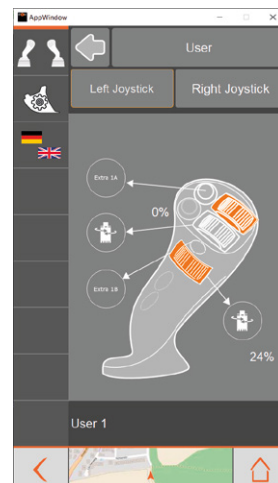
Home display attachment & quick coupler



Geometry overview of attachment and interface to 2D/3D systems



Easy and logical menu navigation



Individual function configuration of joystick buttons



STANDARD JOYSTICK FRONT



STANDARD JOYSTICK BACK

Joysticks

The L8 is the multifunctional ergonomic joystick grip that has set a new standard with its innovative, functional design. You can control two roller functions simultaneously with your thumb and index finger. Up to three rollers can be installed, two for the thumb and one for the index finger. On the grip there is room for up to nine buttons, meaning that most functions can be gathered in a small area. (Joysticks must be replaced when CSP - NOXProp+ or NOXProp is installed.)

OPTIONALLY EXTENDABLE:



F-N-R JOYSTICK OPTION

ADDITIONAL PROP JOYSTICK OPTION

ADDITIONAL PROP & F-N-R JOYSTICK OPTION

DF04 CONTROL SYSTEM

The DF04 control system requires 2 double-acting hydraulic circuits. Only two functions, e.g. rotation and tilting, can be realized simultaneously. In order to control the attachment or the quick coupler, one of the two hydraulic circuits is separated by a switch valve, installed on the NOX Tiltrotator. Therefore, up to two extra functions, e.g. quick coupler, can be realized.

MACHINE REQUIREMENTS FOR DF04

- ▶ Hydraulic rotation circuit to control the NOX rotation
- ▶ Hydraulic circuit with high flow controls tilt, additional functions and quick coupler
- ▶ Control system for switch between tilt, additional functions and quick coupler
- ▶ One free ON/OFF button at existing joysticks to control the switch between the different functions



DF04-CONTROL UNIT

DF06 CONTROL SYSTEM

The DF06 control system requires 2 double-acting hydraulic circuits for the rotation and tilt movement of the NOX Tiltrotator. For the use of a hydraulic quick coupler, an additional circuit is required. The tilt function can be switched by pressing a button on the joystick to the extra function controlling e.g. the opening and closing of a grab.

MACHINE REQUIREMENTS FOR DF06

- ▶ Hydraulic rotation circuit to control the NOX rotation
- ▶ Hydraulic circuit with high flow controls tilt and extra function, e.g. grab
- ▶ Control system to switch between tilt and extra function
- ▶ One free ON/OFF button at existing joysticks to control the switch between tilt and extra function
- ▶ Original joysticks remain
- ▶ No additional control required - all hydraulic circuits on the excavator
- ▶ Each function needs a double-acting hydraulic circuit

DF10 DIRECT FEED SYSTEM

The DF10 control system requires at least 2 double-acting hydraulic circuits for the rotation and tilt movement of the NOX Tiltrotator. Including the lines of the quick coupler function, two other hydraulic circuits, e.g. open/close grab and open/close intergrated gripper, can be connected to the NOX Tiltrotator. Furthermore, an additional drain line can be installed.

MACHINE REQUIREMENTS FOR DF10

- ▶ For complete control of the NOX, 4 double-acting hydraulic circuits are required: rotation, tilt, extra function 1 and extra function 2 (gripper), one quick coupler circuit
- ▶ Special solution: division of one hydraulic circuit with a switch valve, so two different functions can be controlled by one control circuit. The switch valve has to be installed at an adequate place at the carrier machine or the NOX
- ▶ No additional control required - all hydraulic circuits on the excavator
- ▶ Original joysticks remain
- ▶ No valves or cables on the NOX required
- ▶ Each function needs a double-acting hydraulic circuit
- ▶ Minimal configuration: 2 hydraulic circuits (tilt and rotation) when mechanical quick coupler and no hydraulic attachment

DF04, DF06 & DF10 Control systems

	NOXProp+	DF04	DF06	DF10
NOXGeo (GPS-ready)	✓	●	●	●
Autocalibration	✓	⊖	⊖	⊖
Angle position indication	✓	⊖	⊖	⊖
Individual operator settings	✓	⊖	⊖	⊖
Individual speed setting	✓	⊖	⊖	⊖
Touchscreen in cabin	✓	⊖	⊖	⊖
Trouble shooting on display	✓	⊖	⊖	⊖
Connectivity tools (Bluetooth, LTE, WiFi)	✓	⊖	⊖	⊖
Fully proportional control	✓	depending on machine	depending on machine	depending on machine
Changing roller position	✓	⊖	⊖	⊖
Individual tool settings	✓	⊖	⊖	⊖
Tilt, rotation & extra in same movement	✓	⊖	⊖	depending on machine
High flow attachment	●	⊖	⊖	●
Quick coupler safety sensors	●	⊖	⊖	⊖
Quick coupler control	✓	⊖	⊖	⊖
Driving/steering function	●	⊖	⊖	⊖
Fleet management	●	●	●	●
Machine assistance systems	●	⊖	⊖	⊖

✓ Standard

● Optional



CSP-NOXProp - LINES



DF04 - LINES



DF06 - LINES



DF10 - LINES

Always the right control system depending on the machine's hydraulic configuration

The table provides a quick overview on the different functions and for which control system they are available. Short summary on machine requirements:

CSP: NOXProp+
Hammer/shear circuit

DF04
2 x proportional double-acting circuits

DF06
2 x proportional double-acting circuits (tilt and rotation)
1 x hydraulic quick coupler circuit

DF10
2 x proportional double-acting circuits (tilt and rotation)
1 x hydraulic quick coupler circuit
1 x double-acting high pressure circuit (compactor)
1 x double-acting low pressure circuit (gripper)

NOXGeo SENSOR TECHNOLOGY

With the NOXGeo, sensors send position data to the digital control at the NOXprop+ touchscreen in the driver's cabin. Thereby, the attachments are connected to the digital technology of the excavator/machine control. The NOXGeo system also allows the functionality to interface with 2D/3D systems of all common manufacturers thanks to the open system.

GPS INTEGRATION OF 2D/3D SYSTEMS

It is possible to integrate various makes of GPS into the NOX control system. Thanks to the GPS you can use the excavator to collect and define points. Connect the computer of the machine via the integrated GSM-modem to get fast support and transfer data. With our 3D-system you can take the last step towards machine control.



TILT SENSOR TILT MOVEMENT



The exact position of the tiltrotator's tilt movement and the attachment is transferred directly to the control display in the driver's cabin by means of the tilt sensor.

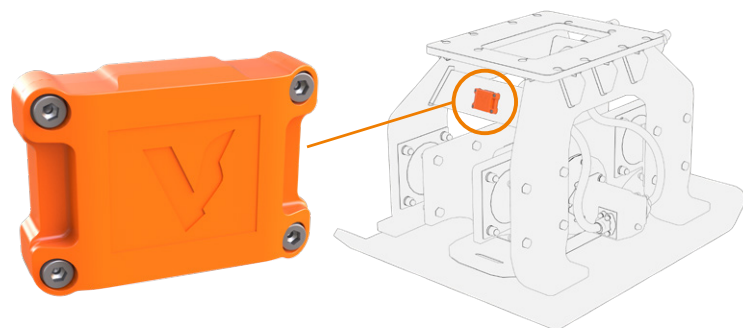
ROTATION SENSOR ROTATION MOVEMENT



The KINSHOFER rotation sensor shows the exact position of the tiltrotator and the attachment during rotation. The determined data is transferred directly to the control display in the driver's cabin.

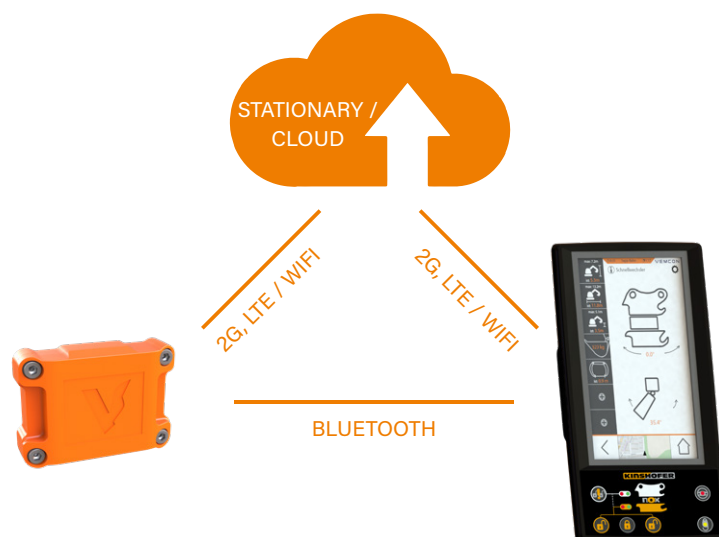
SYSTEM: SMARTTAG

The SmartTag is a microcontrol-based tool with a communication functionality via mobile radio and an internal storage to locally back up operating information, error information, etc. The unit only measures 15 cm, it is waterproof, shock resistant, thermo-stable from -25 up to 80 °C, shockproof and has an internal energy supply for approx. 2 years.



NETWORKING: DATA EXCHANGE

The tool management system consists of a SmartTag at the attachment as well as its interconnection with the terminal and/or cloud. The SmartTag measures vibrations and positions of the attachment. This information is directly transferred to the cloud via LTE and is thus independent from the machine. From there, the data can be read with every terminal device. The way, frequency and send release of the data exchange can be set individually.



SMARTTAG FUNCTIONS

GPS-TRACKING
The function GPS-tracking is used to detect the location of an attachment by entitled persons.

DIGITAL TYPE PLATE
The digital type plate provides the identical data as does the mechanical type plate like serial number, name and weight, as well as operating pressure.

PREVENTIVE MAINTENANCE
This function is used for issuing a service recommendation in which a preventive service for the respective attachment will be recommended in order to prevent downtimes.

FLEET MANAGEMENT CONNECTION

ACCELERATION MEASUREMENT
This function of the three-axe acceleration sensors is the detection of the attachment's position as well as of shock values.

BLUETOOTH-CONNECTIVITY
for tool recognition.

THEFT PROTECTION
This function shall be used to find an attachment by locating.

WORKING HOURS
Especially important for rental companies - working hours can be recorded and reported.

NOXGeo Sensor technology

By means of the sensors, the manual staking out of the work area by a person is reduced, as the precise dimensioning is shown on the display in the driver's cabin. The controlled and exact excavation of the required amount results in large time savings and reduced fuel consumption. Furthermore, the attachments and the carrier wear less.

KINSHOFER equips the NOX Tiltrotator with the rotation sensor, the tilt sensor comes from the 2D/3D system provider. In combination with certain excavator systems and makes, the NOXGeo system allows for an auto-turning function.

SmartTag Tool tracker

The SmartTag and the cloud-based tool management support the driver and operator with the efficient choice and detection of suitable tools for each special task. Operators have their complete fleet under control and thus avoid downtimes and maximize their tool workload.

The SmartTag combines two up to now separated functions in one sensor: tool detection and tracking. As digital type plate, the tool tracker files information on geometries, name, manufacturer, year, ID and operation (e.g. required operating pressure of attachment). At the same time, it gathers, analyzes and detects operating hours, cycles and work processes. Thank to GPS position and timestamp, you receive data like when and where an attachment had been put down and how it had been used.

LANDSCAPING

The NOX Tiltrotator provides a third dimension, resulting in a reduced need to reposition your carrier machine. Ground damages and subsequent recultivation works are minimized. When laying out a garden or protecting slopes from erosion, the functionality of the NOX strongly shortens the construction time.



GENERAL CONSTRUCTION

Excavation or filling works can be realized precisely thanks to the NOX Tiltrotator with its tilt and turn function. The work can be done within the reach of the excavator arm without repositioning the carrier machine in a faster and more profitable way. The working safety on site is also increased when handling construction material.



RAIL CONSTRUCTION

Thanks to the NOX Tiltrotator, a lot of works that are difficult or impossible in rail construction due to the limited lateral mobility of the carrier machine can be realized. Works under already existing rails or at slopes as well as the exact positioning of sleepers are possible without repositioning the excavator thanks to the tilt and turn function.



ROAD CONSTRUCTION

When constructing roads, time is a crucial factor, but also precision and safety when e.g. levelling grounds, working at embankments or excavating soil. Thanks to the tilt and turn function of the NOX Tiltrotator, all works can be managed safely from the driver's cabin and less manpower is required in the danger area.



SEWAGE WORKS

Working in sewer systems is characterized by little space and narrow areas. With a NOX Tiltrotator you can easily dig around gully wells or excavate from the required angle without repositioning the excavator. The endless rotation and the tilt angle to both sides allows for the exact positioning of the attachment.



CABLE DUCT WORKS

The NOX Tiltrotator enables precise working under, in between or close to already existing cables. By tilting and turning the attachment in the required position, you can reduce manual cable duct works. When maintaining existing cable ducts or installing new ones, works can be realized much more effectively and after all more safely.



MATERIAL HANDLING

Precise handling of e.g. palletized curbstones is no problem with the NOX Tiltrotator. The high and constant holding torque allows for a safe holding of loads. When operating in narrow areas, loads can be held e.g. around scaffolding or lifted over a fence.

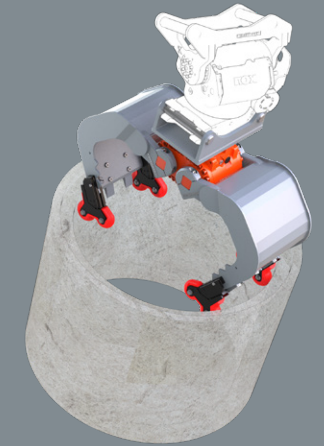


DEMOLITION

The immediate separation of debris at the demolition site saves a lot of time and recycling costs. Some building materials have to be disposed separately and with the NOX Tiltrotator you can separate those precisely from the other materials. After loading the material, the construction site can be cleared with e.g. a brush mounted to the NOX.



NOX Large variety of KINSHOFER attachments

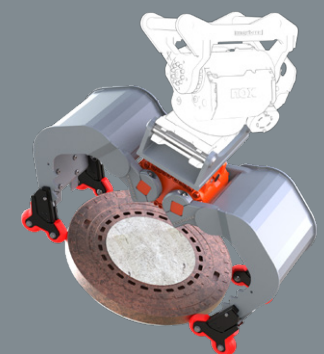


4-Grip

Easy mounting - easy handling of your tasks: that is our new 4-Grip for our demolition and sorting grabs of the D-series up to 9t / 19,800 lbs operating weight as well as our multi purpose grabs of the A-series up to 9t / 19,800 lbs. The device is easily bolt onto the shells and you can grab concrete units, curbstones etc. smoothly.

Thanks to its special kinematics you can grab items not only when closing the shells but also when opening. Shaft rings can be loaded and unloaded fast and easy without damaging them!

- ▷ **Economic solution**, as it is only an accessory that increases the flexibility of your attachment
- ▷ **Robust design**
- ▷ **Plastic compression rolls** avoid damage of the material to be gripped
- ▷ **Fast and easy mounting and removal** on site
- ▷ **Low additional weight:** only 28 kg / 61.6 lbs in total
- ▷ **High load capacity of 750 kg / 1,650 lbs**



Tiltrotator TR045NOX

Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR045NOX	40 / 8,800	2 x 45°	6.5 / 4,794 constant	3.8 / 2,803	150 / 330	2.5 - 4.5 / 5,500 - 9,900

Standard package: TR045NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

Other adapter, quick coupler & control systems on request.



Gripper

Type	Opening (mm)	Closing force (kN)	Load capacity (kg)	Weight (from kg)
F07H	424 / 16.7	7.5 / 1,650	300 / 660	77 / 169.4

Package consists of: gripper with integrated adapter

Other adapter systems on request.



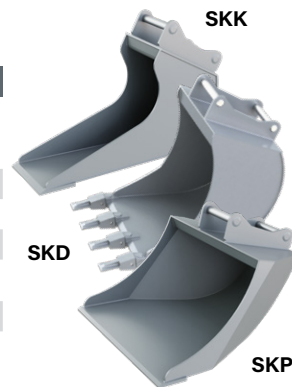
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Buckets

Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK4-60	trench bucket	300 / 12	60 / 0.078	50 / 110
SKD4-80	digging bucket	450 / 18	80 / 0.105	65 / 143
SKD4-115	digging bucket	600 / 24	115 / 0.150	80 / 176
SKP2-110	grading bucket	1,000 / 42	110 / 0.144	75 / 165

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S40)

Other bucket types, widths or volumes on request.



SKK

SKD

SKP

Fork tines

Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAf6	mechanical	1,900 / 4,180	1,000 / 39.4	140 / 308	3 - 6 / 6,600 - 13,200
GAH6	hydraulically	1,900 / 4,180	1,000 / 39.4	160 / 352	3 - 6 / 6,600 - 13,200

Package consists of: fork tines, frame with adapter system S-Lock (S40)

Other adapter systems on request.



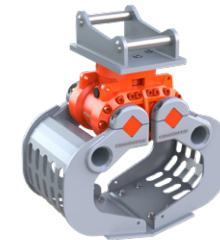
Demolition and sorting grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
D05TR-40 HPX	420 / 16.5	1,045 / 41.1	75 / 0.1	240 / 528	3 - 6 / 6,600 - 13,200	1,500 / 3,300	18 / 3,960
D05TR-40	420 / 16.5	1,212 / 47.7	60 / 0.08	160 / 352	3 - 6 / 6,600 - 13,200	1,500 / 3,300	21.5 / 4,730

Package consists of: demolition and sorting grab, hydraulic block for HPX, adapter system S-Lock (S40)

Available as an option: 4-Grip

Other adapter systems on request.



Multi purpose grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
A05TR-40 HPX	386 / 15.2	1,043 / 41.1	70 / 0.09	225 / 495	3 - 6 / 6,600 - 13,200	1,500 / 3,300	18 / 3,960
A05TR-40	386 / 15.2	1,233 / 48.5	70 / 0.09	165 / 363	3 - 6 / 6,600 - 13,200	1,500 / 3,300	21 / 4,620

Package consists of: multi purpose grab, hydraulic block for HPX, adapter system S-Lock (S40)

Available as an option: 4-Grip

Other adapter systems on request.



4-Grip

Type	For grab types	Load capacity (kg/lbs)	Weight (kg/lbs)	Operating weight (t/lbs)
KM 685-05-D04-A04	D05TR / A05TR	750 / 1,650	24 / 52.8	<6 / <13,200



Compactor wheel

Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC1-400	500 / 19.7	400 / 15.8	300 / 660	1.5 - 4 / 3,300 - 8,800

Package consists of: compactor wheel

Optional adapter systems and other widths on request.



Note: other attachments and adapters on request

Note: other attachments and adapters on request

Tiltrotator TR07NOX

Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR07NOX	50 / 11,000	2 x 50°	11 / 8,113 constant	4.7 / 3,466	200 / 440	4 - 7 / 8,800 - 15,400

Standard package: TR07NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

Other adapter, quick coupler & control systems on request.

Gripper

Type	Opening (mm/in)	Closing force (kN/lbf)	Load capacity (kg/lbs)	Weight (from kg/lbs)
TRG07	424 / 16.7	7.5 / 1,650	300 / 660	40 / 88
F07H	424 / 16.7	7.5 / 1,650	300 / 660	77 / 169

Package consists of: gripper / gripper with integrated adapter

Other adapter systems on request.

Buckets

Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK6-160	trench bucket	300 / 12	160 / 0.209	75 / 165
SKD6-175	digging bucket	450 / 18	175 / 0.229	95 / 210
SKD6-230	digging bucket	600 / 24	230 / 0.301	120 / 265
SKD6-340	digging bucket	900 / 36	340 / 0.445	175 / 386
SKP6-240	grading bucket	1,200 / 48	240 / 0.314	130 / 287

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S40)

Other bucket types, widths or volumes on request.

Levelling bars with roller

Type	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
AVB 8-1800	1,800 / 70.9	200 / 440	<8 / <17,600
AVB 8-2100	2,100 / 82.7	300 / 660	<8 / <17,600
AVB 8-2200	2,200 / 86.6	420 / 924	<8 / <17,600

Package consists of: levelling bar with roller, adapter system S-Lock (S45)

Other adapter systems on request.

Fork tines

Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAF6	mechanical	1,900 / 4,180	1,000 / 39.4	140 / 308	3 - 6 / 6,600 - 13,200
GAH6	hydraulically	1,900 / 4,180	1,000 / 39.4	160 / 352	3 - 6 / 6,600 - 13,200
GAF8	mechanical	1,900 / 4,180	1,200 / 47.3	190 / 418	6 - 8 / 13,200 - 17,600
GAH8	hydraulically	1,900 / 4,180	1,200 / 47.3	210 / 462	6 - 8 / 13,200 - 17,600

Package consists of: fork tines, frame with adapter system S-Lock (S45)

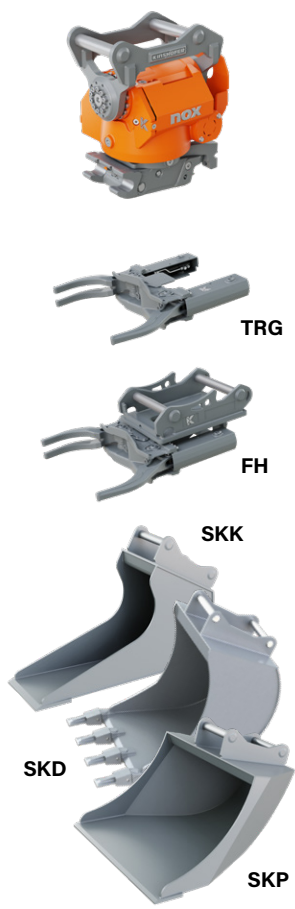
Other adapter systems on request.

Cone crusher bucket

Type	Rotation torque (Nm/ft. lbs)	Speed range (rpm)	Drum diameter (mm/in)	Length (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
Cone Crusher	6,320 - 10,112 / 4,661 - 7,458	36 - 100	600 / 26.6	1,300 / 51.2	376 / 827	3 - 10 / 6,600 - 22,000

Package consists of: cone crusher bucket

Optional adapter systems on request.



Demolition and sorting grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
D07TR-45 HPX	470 / 18.5	1,350 / 53.1	150 / 0.2	310 / 682	5 - 8 / 11,000 - 17,600	2,000 / 4,400	18 / 3,960
D07TR-45	470 / 18.5	1,345 / 53	90 / 0.12	180 / 396	5 - 8 / 11,000 - 17,600	2,000 / 4,400	21 / 4,620

Package consists of: demolition and sorting grab, hydraulic block for HPX, adapter system S-Lock (S45)

Available as an option: 4-Grip

Other adapter systems on request.

Multi purpose grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
A07TR-45 HPX	450 / 17.2	1,344 / 52.9	145 / 0.19	305 / 671	5 - 8 / 11,000 - 17,600	2,000 / 4,400	18 / 3,960
A07TR-45	450 / 17.2	1,340 / 52.8	100 / 0.12	225 / 495	5 - 8 / 11,000 - 17,600	2,000 / 4,400	21 / 4,620

Package consists of: multi purpose grab, hydraulic block for HPX, adapter system S-Lock (S45)

Available as an option: 4-Grip

Other adapter systems on request.

Clamshell buckets with HPXdrive

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C07TR-40 HPX	400 / 15.8	1,110 / 43.7	115 / 0.15	295 / 649	3 - 7 / 6,600 - 15,400	3,000 / 6,600	22 / 4,840
C07TR-50 HPX	500 / 19.7	1,110 / 43.7	140 / 0.18	310 / 682	3 - 7 / 6,600 - 15,400	3,000 / 6,600	22 / 4,840
C07TR-60 HPX	600 / 23.6	1,110 / 43.7	170 / 0.22	325 / 715	3 - 7 / 6,600 - 15,400	3,000 / 6,600	22 / 4,840

Package consists of: clamshell bucket, hydraulic block for HPX, adapter system S-Lock (S45)

Other adapter systems on request.

4-Grip

Type	For grab types	Load capacity (kg/lbs)	Weight (kg/lbs)	Operating weight (t/lbs)
KM 685-05-D06/09-A06/09	D07TR & A07TR	600 / 1,320	28 / 61.6	<11 / <24,200

Compactor wheel

Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC2-500	600 / 26.6	500 / 19.7	330 / 726	4 - 8 / 8,800 - 17,600

Package consists of: compactor wheel

Optional adapter systems and other widths on request.

Note: other attachments and adapters on request



Tiltrotator TR11NOX

Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR11NOX	75 / 16,500	2 x 50°	16 / 11,800 constant	7.5 / 5,531	320 / 704	6 - 11 / 13,200 - 24,200

Standard package: TR11NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

Other adapter, quick coupler & control systems on request.

Gripper

Type	Opening (mm/in)	Closing force (kN/lbf)	Load capacity (kg/lbs)	Weight (from kg/lbs)
TRG11	644 / 25.4	10 / 2,200	500 / 1,100	77 / 169
F11H	644 / 25.4	10 / 2,200	500 / 1,100	131 / 288

Package consists of: gripper / gripper with integrated adapter

Other adapter systems on request.

Buckets

Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK12-250	trench bucket	300 / 12	250 / 0.327	110 / 243
SKD10-200	digging bucket	450 / 18	200 / 0.262	130 / 287
SKD10-270	digging bucket	600 / 24	270 / 0.353	160 / 353
SKD10-395	digging bucket	900 / 36	395 / 0.517	220 / 485
SKP12-475	grading bucket	1,300 / 52	475 / 0.621	280 / 617

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S45)

Other bucket types, widths or volumes on request.

Levelling bars with roller

Type	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
AVB 8-1800	1,800 / 70.9	200 / 440	<8 / <17,600
AVB 8-2100	2,100 / 82.7	300 / 660	<8 / <17,600
AVB 8-2200	2,200 / 86.6	420 / 924	<8 / <17,600

Package consists of: levelling bar with roller, adapter system S-Lock (S50)

Other adapter systems on request.

Fork tines

Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAF8	mechanical	1,900 / 4,180	1,200 / 47.2	190 / 418	6 - 8 / 13,200 - 17,600
GAH8	hydraulically	1,900 / 4,180	1,200 / 47.2	210 / 462	6 - 8 / 13,200 - 17,600
GAF12	mechanical	2,500 / 5,500	1,200 / 47.2	200 / 440	9 - 12 / 19,800 - 26,400
GAH12	hydraulically	2,500 / 5,500	1,200 / 47.2	220 / 484	9 - 12 / 19,800 - 26,400

Package consists of: fork tines, frame with adapter system S-Lock (S50)

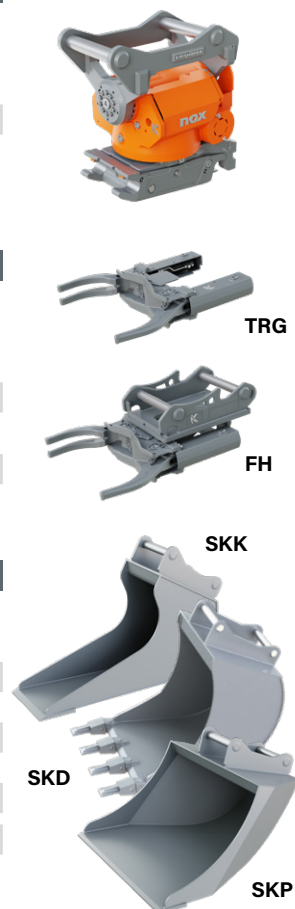
Other adapter systems on request.

Cone crusher bucket

Type	Rotation torque (Nm/ft. lbs)	Speed range (rpm)	Drum diameter (mm/in)	Length (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
Cone Crusher	6,320 - 10,112 / 4,661 - 7,458	36 - 100	600 / 26.6	1,300 / 51.2	376 / 827	3 - 10 / 6,600 - 22,000

Package consists of: cone crusher bucket

Optional adapter systems on request.



Demolition and sorting grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
D11TR-50 HPX	520 / 20.5	1,545 / 60.8	220 / 0.29	360 / 792	7 - 12 / 15,400 - 26,400	2,500 / 5,500	15.3 / 3,366
D11TR-50	520 / 20.5	1,665 / 65.6	165 / 0.22	305 / 671	7 - 12 / 15,400 - 26,400	2,500 / 5,500	24 / 5,280

Package consists of: demolition and sorting grab, hydraulic block for HPX, adapter system S-Lock (S50)

Available as an option: 4-Grip

Other adapter systems on request.

Multi purpose grabs with HPXdrive or hydraulic cylinder

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity form locking (kg/lbs)	Closing force (kN/lbf)
A11TR-50 HPX	500 / 19.7	1,545 / 60.8	210 / 0.27	365 / 803	7 - 12 / 15,400 - 26,400	2,500 / 5,500	15.3 / 3,366
A11TR-50	500 / 19.7	1,650 / 65	175 / 0.23	310 / 682	7 - 12 / 15,400 - 26,400	2,500 / 5,500	25 / 5,500

Package consists of: multi purpose grab, hydraulic block for HPX, adapter system S-Lock (S50)

Available as an option: 4-Grip

Other adapter systems on request.

Clamshell buckets with HPXdrive

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C11TR-40 HPX	400 / 15.8	1,250 / 49.2	145 / 0.19	265 / 583	5 - 11 / 11,000 - 24,200	3,000 / 6,600	22 / 4,840
C11TR-50 HPX	500 / 19.7	1,250 / 49.2	180 / 0.24	295 / 649	5 - 11 / 11,000 - 24,200	3,000 / 6,600	22 / 4,840
C11TR-60 HPX	600 / 23.6	1,250 / 49.2	220 / 0.29	315 / 693	5 - 11 / 11,000 - 24,200	3,000 / 6,600	22 / 4,840

Package consists of: clamshell bucket, hydraulic block for HPX, adapter system S-Lock (S50)

Other adapter systems on request.

4-Grip

Type	For grab types	Load capacity (kg/lbs)	Weight (kg/lbs)	Operating weight (t/lbs)
KM 685-05-D06/09-A06/09	D11TR & A11TR	600 / 1,320	28 / 61	<11 / <24,200

Compactor wheel

Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC2-600	600 / 23.6	600 / 23.6	340 / 748	4 - 8 / 8,800 - 17,600
RC3-600	700 / 27.6	600 / 23.6	360 / 792	8 - 14 / 17,600 - 30,800

Package consists of: compactor wheel

Optional adapter systems and other widths on request.

Note: other attachments and adapters on request

Tiltrotator TR14NOX

Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR14NOX	110 / 24,200	2 x 50°	31 / 22,863 constant	11 / 8,113	485 / 1,067	10 - 14 / 22,000 - 30,800

Standard package: TR14NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

Other adapter, quick coupler & control systems on request.

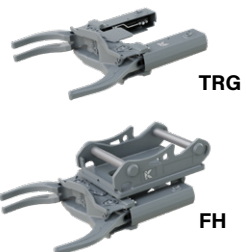


Gripper

Type	Opening (mm/in)	Closing force (kN/lbf)	Load capacity (kg/lbs)	Weight (from kg/lbs)
TRG19	734 / 28.9	18.5 / 4,070	900 / 1,980	127 / 279
F19H	734 / 28.9	18.5 / 4,070	900 / 1,980	265 / 583

Package consists of: gripper / gripper with integrated adapter

Other adapter systems on request.

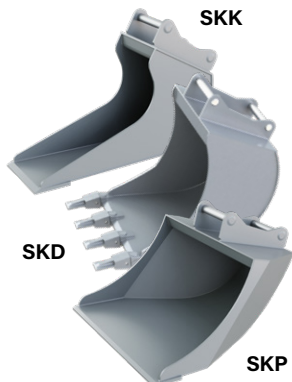


Buckets

Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK14-300	trench bucket	500 / 20	300 / 0.392	140 / 309
SKD16-550	digging bucket	900 / 36	550 / 0.719	325 / 717
SKD16-610	digging bucket	1,000 / 42	610 / 0.798	380 / 838
SKP14-600	grading bucket	1,600 / 64	600 / 0.785	390 / 860

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S60)

Other bucket types, widths or volumes on request.

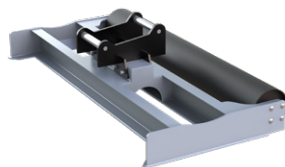


Levelling bars with roller

Type	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
AVB 24-2500	2,500 / 98.4	420 / 924	<24 / <52,800
AVB 24-2700	2,700 / 106.3	470 / 1,034	<24 / <52,800

Package consists of: levelling bar with roller, adapter system S-Lock (S60)

Other adapter systems on request.



Fork tines

Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAF18	mechanical	4,000 / 8,800	1,200 / 47.2	340 / 748	13 - 18 / 28,600 - 39,600
GAH18	hydraulically	4,000 / 8,800	1,200 / 47.2	340 / 748	13 - 18 / 28,600 - 39,600

Package consists of: fork tines, frame with adapter system S-Lock (S60)

Other adapter systems on request.



Note: other attachments and adapters on request

Demolition and sorting grabs

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
D14TR-60	600 / 23.6	1,555 / 61.2	260 / 0.34	400 / 880	11 - 14 / 24,200 - 30,800	3,000 / 6,600	30 / 6,600

Package consists of: demolition and sorting grab, adapter system S-Lock (S60)

Other adapter systems on request.



Multi purpose grabs

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
A14TR-60	600 / 23.6	1,890 / 74.4	260 / 0.34	510 / 1,122	11 - 14 / 24,200 - 30,800	3,000 / 6,600	30 / 6,600

Package consists of: multi purpose grab, adapter system S-Lock (S60)

Other adapter systems on request.

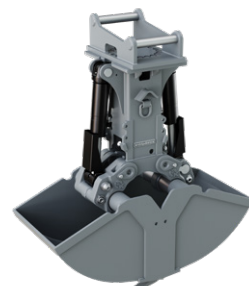


Clamshell bucket

Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C14TR-60	600 / 23.6	1,645 / 64.7	245 / 0.32	510 / 1,122	11 - 14 / 24,200 - 30,800	4,500 / 9,900	39 / 8,580

Package consists of: clamshell bucket, adapter system S-Lock (S60)

Other adapter systems on request.



Multi-Grip

Type	Width (mm/in)	Opening (mm/in)	Volume (m²/cord)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
MG16	531 / 20.9	1,822 / 71.7	0.36 / 0.24	474 / 1,043	12 - 18 / 26,400 - 39,600	8,000 - 17,600	27 / 5,940

Package consists of: Multi-Grip, adapter system S-Lock (S60)

Other adapter systems on request.



Compactor wheel

Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC3-600	700 / 27.6	600 / 23.6	360 / 792	8 - 14 / 17,600 - 30,800

Package consists of: compactor wheel

Optional adapter systems and other widths on request.



Note: other attachments and adapters on request

Tiltrotator TR19NOX						
Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR19NOX	150 / 33,000	2 x 50°	40.5 / 29,869 constant	12 / 8,850	580 / 1,267	14 - 19 / 30,800 - 41,800

Standard package: TR19NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

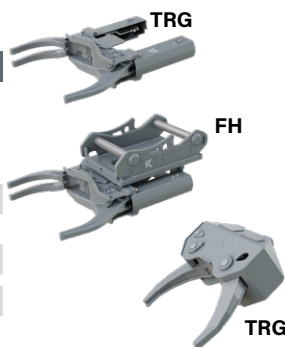
Other adapter, quick coupler & control systems on request.



Gripper				
Type	Opening (mm/in)	Closing force (kN/lbf)	Load capacity (kg/lbs)	Weight (from kg/lbs)
TRG19	734 / 28.9	18.5 / 4,070	900 / 1,980	127 / 279
F19H	734 / 28.9	18.5 / 4,070	900 / 1,980	165 / 363
RR-TRG19	822 / 32.4	30.1 / 6,622	5,000 / 11,000	170 / 374

Package consists of: gripper / gripper with integrated adapter

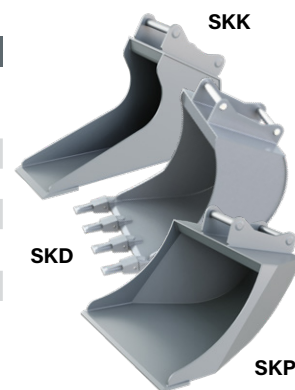
Other adapter systems on request.



Buckets				
Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK22-400	trench bucket	600 / 24	400 / 0.523	285 / 628
SKD18-700	digging bucket	900 / 36	700 / 0.916	440 / 970
SKD18-770	digging bucket	1,000 / 42	770 / 1.007	495 / 1,091
SKP18-750	grading bucket	1,700 / 64	750 / 0.981	380 / 838

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S60)

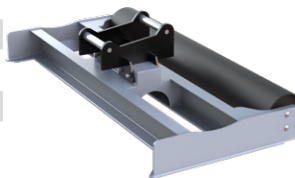
Other bucket types, widths or volumes on request.



Levelling bars with roller			
Type	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
AVB 24-2500	2,500 / 98.4	420 / 924	<24 / <52,800
AVB 24-2700	2,700 / 106.3	470 / 1,034	<24 / <52,800

Package consists of: levelling bar with roller, adapter system S-Lock (S60)

Other adapter systems on request.



Fork tines					
Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAF18	mechanical	4,000 / 8,800	1200 / 47.2	340 / 748	13 - 18 / 28,600 - 39,600
GAH18	hydraulically	4,000 / 8,800	1200 / 47.2	340 / 748	13 - 18 / 28,600 - 39,600
GAF20	mechanical	4,000 / 8,800	1200 / 47.2	420 / 924	19 - 20 / 41,800 - 44,000
GAH20	hydraulically	4,000 / 8,800	1200 / 47.2	420 / 924	19 - 20 / 41,800 - 44,000

Package consists of: fork tines, frame with adapter system S-Lock (S60)

Other adapter systems on request.



Note: other attachments and adapters on request

Demolition and sorting grabs							
Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
D19TR-60	600 / 23.6	1550 / 61	225 / 0.29	450 / 990	14 - 19 / 30,800 - 41,800	4000 / 8,800	32 / 7,040
D19TR-80	800 / 31.5	1550 / 61	300 / 0.39	500 / 1,100	14 - 19 / 30,800 - 41,800	4000 / 8,800	27 / 5,940
D19TR-100	1000 / 39.4	1870 / 73.6	500 / 0.65	595 / 1,309	14 - 19 / 30,800 - 41,800	4000 / 8,800	25 / 5,500

Package consists of: demolition and sorting grab, adapter system S-Lock (S60)

Other adapter systems on request.

Multi purpose grabs							
Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
A19TR-60	600 / 23.6	1,900 / 74.8	300 / 0.39	570 / 1,254	14 - 19 / 30,800 - 41,800	4,000 - 8,800	27 / 5,940

Package consists of: multi purpose grab, adapter system S-Lock (S60)

Other adapter systems on request.

Clamshell bucket							
Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C19TR-60	600 / 23.6	1,655 / 65.1	245 / 0.32	575 / 1,262	14 - 19 / 30,800 - 41,800	4,500 / 9,900	42 / 9,240

Package consists of: clamshell bucket, adapter system S-Lock (S60)

Other adapter systems on request.

Multi-Grip							
Type	Width (mm/in)	Opening (mm/in)	Volume (m²/cord)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
MG16	531 / 20.9	1,822 / 71.7	0.36 / 0.24	474 / 1,043	12 - 18 / 26,400 - 39,600	8,000 / 17,600	27 / 5,940
MG20	531 / 20.9	2,279 / 89.7	0.52 / 0.35	560 / 1,232	16 - 22 / 35,200 - 48,400	10,000 / 22,000	33 / 7,260

Package consists of: Multi-Grip, adapter system S-Lock (S60)

Other adapter systems on request.

Compactor wheel				
Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC4-600	1000 / 39.4	600 / 23.6	800 / 1,760	14 - 20 / 30,800 - 44,000

Package consists of: compactor wheel

Optional adapter systems and other widths on request.

Note: other attachments and adapters on request

Tiltrotator TR19NOX						
Type	Breakout force max. (ISO) (kN/lbf)	Tilt angle (°)	Tilt torque (kNm / ft. lbs)	Rotation torque (kNm / ft.lbs)	Weight (from kg / lbs)	Operating weight (t / lbs)
TR25NOX	170 / 37,400	2 x 50°	51,7 / 38,129 constant	15 / 11,063	860 / 1,892	19 - 25 / 41,800 - 55,000

Standard package: TR25NOX, upper bracket direct mount, quick coupler system S-Lock, NOX-Control DF10

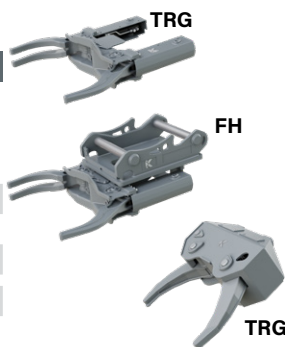
Other adapter, quick coupler & control systems on request.



Gripper				
Type	Opening (mm/in)	Closing force (kN/lbf)	Load capacity (kg/lbs)	Weight (from kg/lbs)
TRG25	1137 / 44.8	19.5 / 4,290	1300 / 2,860	224 / 493
F25H	1137 / 44.8	19.5 / 4,290	1300 / 2,860	265 / 583
RR-TRG25	822 / 32.4	30.1 / 6,622	5,000 / 11,000	187 / 411

Package consists of: gripper / gripper with integrated adapter

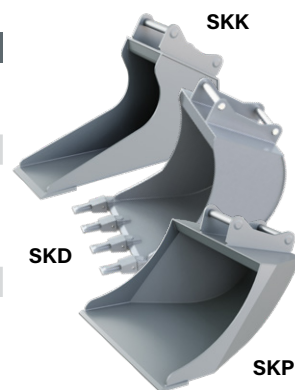
Other adapter systems on request.



Buckets				
Type	Bucket types	Width (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)
SKK22-400	trench bucket	600 / 24	400 / 0.523	320 / 705
SKD20-850	digging bucket	900 / 36	850 / 1.112	550 / 1,213
SKD22-1100	digging bucket	1,000 / 42	1,100 / 1.439	850 / 1,874
SKP22-1100	grading bucket	1,800 / 72	1,100 / 1.439	460 / 1,014

Package consists of: trench / digging / grading bucket, adapter system S-Lock (S70)

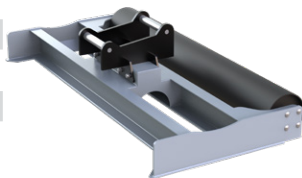
Other bucket types, widths or volumes on request.



Levelling bars with roller			
Type	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
AVB 24-2500	2,500 / 98.4	420 / 924	<24 / <52,800
AVB 24-2700	2,700 / 106.3	470 / 1,034	<24 / <52,800

Package consists of: levelling bar with roller, adapter system S-Lock (S70)

Other adapter systems on request.



Fork tines					
Type	Tine adjustment	Load capacity max. (kg/lbs)	Width (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
GAF20	mechanical	4,000 / 8,800	1,200 / 47.2	420 / 924	19 - 20 / 41,800 - 44,000
GAH20	hydraulically	4,000 / 8,800	1,200 / 47.2	420 / 924	19 - 20 / 41,800 - 44,000
GAF24	mechanical	4,000 / 8,800	1,200 / 47.2	440 / 968	21 - 24 / 46,200 - 52,800
GAH24	hydraulically	4,000 / 8,800	1,200 / 47.2	440 / 968	21 - 24 / 46,200 - 52,800

Package consists of: fork tines, frame with adapter system S-Lock (S70)

Other adapter systems on request.



Note: other attachments and adapters on request

Demolition and sorting grabs							
Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
D25TR-84	840 / 33.1	1,890 / 74.4	380 / 0.50	725 / 1,595	18 - 25 / 39,600 - 55,000	5,000 / 11,000	42 / 9,240
D25TR-100	1,000 / 39.4	1,890 / 74.4	450 / 0.59	770 / 1,694	18 - 25 / 39,600 - 55,000	5,000 / 11,000	42 / 9,240

Package consists of: demolition and sorting grab, adapter system S-Lock (S70)

Other adapter systems on request.

Multi purpose grabs							
Type	Width (mm/in)	Opening (mm/in)	Volume (liter/c.y.)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
A25TR-70	700 / 26.6	2,038 / 80.2	400 / 0.52	815 / 1,793	18 - 25 / 39,600 - 55,000	5,000 / 11,000	38 / 8,360

Package consists of: multi purpose grab, adapter system S-Lock (S70)

Other adapter systems on request.

Multi-Grip							
Type	Width (mm/in)	Opening (mm/in)	Volume (m ² /cord)	Weight (kg/lbs)	Operating weight (t/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
MG20	531 / 20.9	2,279 / 89.7	0.52 / 0.35	560 / 1,232	16 - 22 / 35,200 - 48,400	10,000 / 22,000	33 / 7,260

Package consists of: Multi-Grip, adapter system S-Lock (S60)

Other adapter systems on request.

Compactor wheel				
Type	Diameter compactor wheel (mm/in)	Width compactor wheel (mm/in)	Weight (kg/lbs)	Operating weight (t/lbs)
RC4-800	1,000 / 39.4	800 / 31.5	900 / 1,980	14 - 20 / 30,800 - 44,000

Package consists of: compactor wheel

Optional adapter systems and other widths on request.



Note: other attachments and adapters on request

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