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Rail Construction and Maintenance

Excavator and
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2023-V2



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Using a RST03 ballast tamper mounted especially efficient to a **NOX** tiltrotator, the packing of ballast under sleepers is not only fast, but also efficient and economical. Ideal for road-rail excavators with 10t - 24t / 22,000 - 52,800 lbs operating weight.

- ▶ **Low weight.**
- ▶ **Complete** with high frequency vibrating unit.
- ▶ **Efficiency:** the strong, silent compressor destabilizes the gravel ballast, while the built-in vibration unit is running. The four arms are thrust into the gravel and pack it by vibrating. They move alongside and below the sleeper into the ground and tamper optimally.
- ▶ **High frequency, low noise operation.**
- ▶ **Strong vibration rubbers** for low vibration against the machine.
- ▶ **Adjustable tamping depth** for concrete sleepers or for steel and timber ties.
- ▶ **Different displacements** of engines available according to the recommended oil flow needed.



Ballast Tamper RST

Type	Gripping range A (mm/in)	Weight (kg/lbs)	Length B (mm/in)	Height C (with adapter) (mm/in)	Width E (mm/in)	Gripper elements (pcs)	Compaction force (kg/lbs)
RST03	195 - 650 / 7.8 - 25.6	520 / 1,144	840 / 33.1	1,215 / 47.8	635 / 25.0	4	7,500 / 16,500

Package consists of: ballast tamper, vibrating unit, with plate with hole pattern for bolt-on adapters

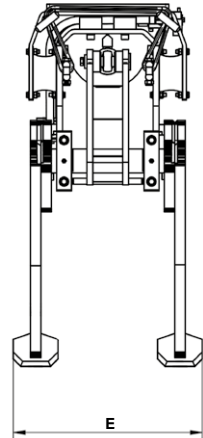
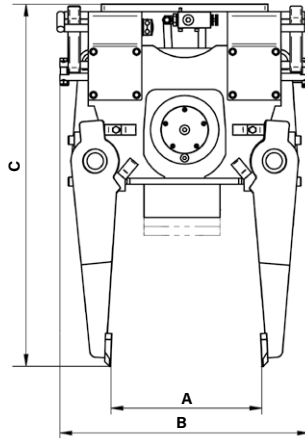
Note: suitable for all kinds of sleepers. For adapters see mounting options.

Accessories

Description

Supporting rack for transport for RST03

optional rack for transport



Requirements of Excavator

Two hydraulic circuits needed, one of them double effective (open / close) and one hammer line (vibration), with free line to the tank

Operating pressure

max. 15 MPa (150 bar) / 2,160 psi

Recommended oil flow open/close

50 - max. 85 l/min / 13.2 - max. 22.5 GPM

Recommended oil flow vibration

40 - 45 l/min / 10.6 - max. 11.9 GPM
(free line to tank required)

Ballast Tamper with Rotation

RST03HD  14 - 24t

Using a RST03HD ballast tamper with rotation, the packing of ballast under sleepers is not only fast, but also efficient and economical. Ideal for road-rail excavators with 14t / 30,800 lbs up to 24t / 52,800 lbs operating weight.

- ▷ **Low weight.**
- ▷ **Complete** with high frequency vibrating unit and rotation.
- ▷ **Efficiency:** the strong, silent compressor destabilizes the gravel ballast, while the built-in vibration unit is running. The four arms are thrust into the gravel and pack it by vibrating. They move alongside and below the sleeper into the ground and tamper optimally.
- ▷ **Flexibility:** adjustable arms and force.
- ▷ **High frequency.**
- ▷ **Low noise operation.**
- ▷ **Strong vibration rubbers** for low vibration against the machine.
- ▷ **Adjustable tamping depth** for concrete sleepers or for steel and timber ties.



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Ballast Tamper RST03HD

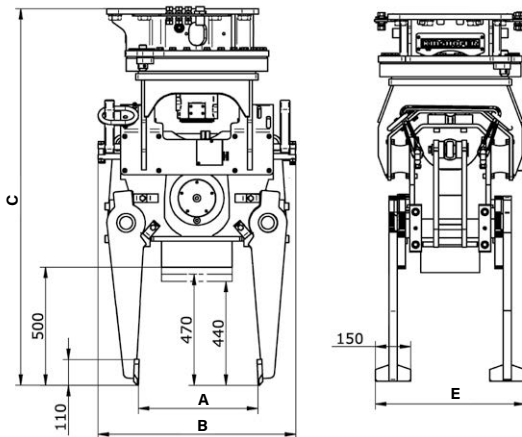
Type	Gripping range A (mm/in)	Weight (kg/lbs)	Length B (mm/in)	Height C (mm/in)	Width E (mm/in)	Gripper elements (pcs)	Compaction force (kg/lbs)
RST03HD	195 - 650 / 7.8 - 25.6	1,025 / 2,255	840 / 33.1	1,600 / 63	635 / 25	4	7,500 / 16,500

Package consists of: ballast tamper, vibrating unit, KINSHOFER rotation incl. 2 motors

Note: suitable for all kinds of sleepers. For adapters see mounting options.

Accessories

Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620 supporting rack for transport for RST03HD



optional rack for transport



Requirements of Excavator

Three hydraulic circuits needed, two of them double effective (open / close and rotation) and one hammer line (vibration), with free line to the tank and overflow oil line.

Operating pressure
(open/close/vibration)
max. 15 MPa (150 bar) /
2,160 psi

Operating pressure
(rotate)
max. 14 MPa (140 bar) /
2,016 psi

Recommended
oil flow (open/close)
50 - max. 85 l/min /
13.2 - max. 22.5 GPM

Recommended
oil flow (vibration)
40 - 45 l/min /
10.6 - max. 11.9 GPM
(free line to tank required)

Recommended
oil flow (rotate)
25 - max. 45 l/min /
6.6 - max. 11.9 GPM

Using the double ballast tamper DT03/22 with 360° rotation, the packing of ballast under sleepers is not only fast, but also highly efficient and economical. Ideal for road-rail excavators with 14t / 30,800 lbs up to 24t / 52,800 lbs.

- ▷ **Complete** with two high frequency vibrating units.
- ▷ **Efficient:** the strong, silent compressors destabilize the gravel ballast, while their built-in vibration units are running. Their four arms are thrust into the gravel and pack it by vibrating. They move alongside and below the sleeper into the ground and tamper optimally.
- ▷ **One side 55° tiltable.**
- ▷ **High frequency.**
- ▷ **Low noise operation.**
- ▷ **Strong anti-vibration rubbers** for low vibration against the machine.
- ▷ 360° rotation incl. 2 motors
- ▷ **Adjustable tamping depth** for concrete sleepers or for steel and timber ties.



Double Ballast Tamper DT03/22

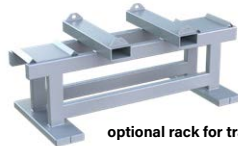
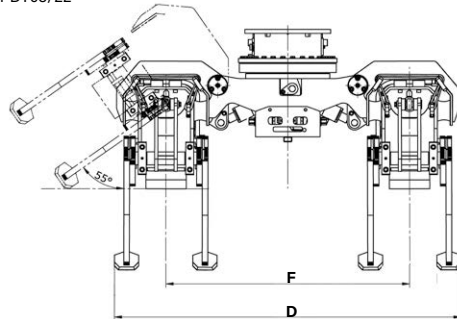
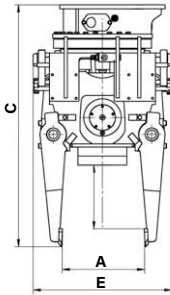
Type	Length D	Width E	Height C	Weight	Tamping elements	Tilt angle	Gauge F	Tamping range A	Tamping depth	Compaction force
	(mm/in)	(mm/in)	(mm/in)	(kg/lbs)	(pcs)	(°)	(mm/in)	(mm/in)	(mm/in)	(kg/lbs)
DT03/22	2,140 / 84.3	850 / 33.5	1,490 / 58.7	1,800 / 3,960	2 x 4	55	1,435 / 56.5	195 - 650 / 7.7 - 25.6	440 - 500 / 17.3 - 19.7	7,500 / 16,500

Package consists of: 2 ballast tampers tiltable at adapter plate, KINSHOFER rotation incl. 2 motors

Note: for adapters see mounting options.

Accessories

Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620 supporting rack for transport for DT03/22



optional rack for transport

Requirements of Excavator

Three hydraulic circuits needed, two of them double effective (open / close and rotation) and one hammer line (vibration), with free line to the tank and overflow oil line.

Operating pressure (open/close/vibration)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (vibration)	Recommended oil flow (rotate)
max. 15 MPa (150 bar) 2,160 psi	max. 14 MPa (140 bar) 2,016 psi	50 - max. 85 l/min / 13.2 - max. 22.5 GPM	75 - 85 l/min @ 150 bar / 19.8 - 22.5 GPM @ 2160 psi (free line to tank required)	25 - max. 45 l/min / 6.6 - max. 11.9 GPM

Multi purpose sleeper changing unit RBS20HPX for the extraction and exchange of railway ballast and concrete sleepers (B55/58 or B70), as well as wooden or steel sleepers of different shapes and sizes. Ideal for road rail excavators with 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Efficiency:** the large shield with buckets clears the track from the ballast. The sleeper is then grabbed by the hydraulically operated gripper and pulled out from the ballast bed. Once the new sleeper is placed, the shield is used to bring back and level the ballast again. Rational use.
- ▷ **Safety:** a special holding valve provides a safe grip – even if pressure drops.
- ▷ **Reduced wear** due to the use of HARDOX quality steel.
- ▷ **Bolt-on adapter:** available for different quick coupling systems.
- ▷ **HPXdrive:** maintenance-low and cylinderless drive unit with exchangeable shell system.
- ▷ **360° endless rotation** due to the integrated 15t-rotator.
- ▷ **Adjustable plunge depth** for more flexibility (depending on sleeper height).
- ▷ **3 bolt-on ballast buckets**, exchangeable in a few minutes.
- ▷ **Adjustable plunge depth of shield.**
- ▷ **Short version with adjusted kinematics** RBS20HPX-S: gripping unit directly mounted to the shield.



RBS20HPX-S

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Sleeper Changers RBS20HPX with Shield and *HPXdrive*

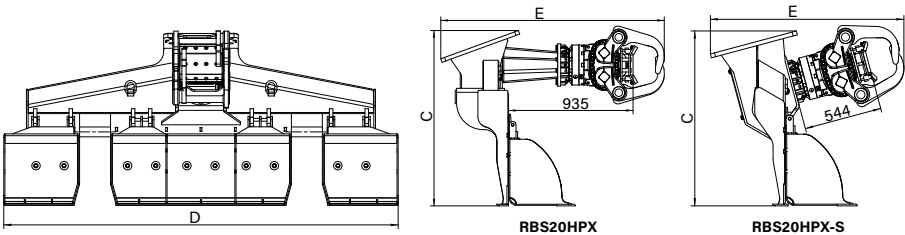
Type	Gripping range	Weight	Length D	Height C	Width E	Gripper elements (pcs)	Load capacity (kg/lbs)
	min. - max. (mm/in)						
RBS20HPX	270 - 570 / 10.6 - 22.4	1,250 / 2,750	2,800 / 110.2	1,340 / 52.8	1,670 / 65.8	4	2,000 / 4,400
RBS20HPX-S	270 - 570 / 10.6 - 22.4	1,170 / 2,574	2,800 / 110.2	1,220 / 48.0	1,280 / 50.4	4	2,000 / 4,400

Package consists of: sleeper changing unit, ballast shield and 3 bolt-on ballast buckets, KINSHOFER rotator KM 15 F273/273 and HPXdrive, non-return valve

Accessories

Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620

Note: for adapters see mounting options.



Requirements of Excavator

Two hydraulic circuits needed.

Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 20 MPa (200 bar) / 2,880 psi	max. 35 MPa (350 bar) / 5,040 psi	25 - max. 75 l/min / 6.6 - max. 19.8 GPM	20 - max. 50 l/min / 5.3 - max. 13.2 GPM

Multi purpose sleeper changing unit RBS20 for the extraction and exchange of railway ballast and concrete or wooden sleepers of different shapes and sizes. The RBS20 with Ballast Shield is ideal for road rail excavators with 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Efficiency:** the large shield with buckets clears the track from the ballast. The sleeper is then grabbed by the hydraulically operated gripper and pulled out from the ballast bed. Once the new sleeper is placed, the shield is used to bring back and level the ballast again. Rational use.
- ▷ **BiBloc-Sleepers can be handled** by opening the hydraulic gripper and thus clamping the sleeper.
- ▷ **Safety:** a special holding valve provides a safe grip – even if pressure drops.
- ▷ **Reduced wear** due to the use of HARDOX quality steel.
- ▷ **Bolt-on adapter:** upper brackets for different quick coupling systems available.
- ▷ **360° endless rotation** due to the integrated 15t-rotator.
- ▷ **Adjustable plunge depth** for more flexibility (depending on sleeper height).
- ▷ **3 bolt-on ballast buckets**, exchangeable in a few minutes.
- ▷ **Short version with adjusted kinematics** RBS20-S: gripping unit directly mounted to the shield.



RBS20-S

Sleeper Changers RBS20 with Shield

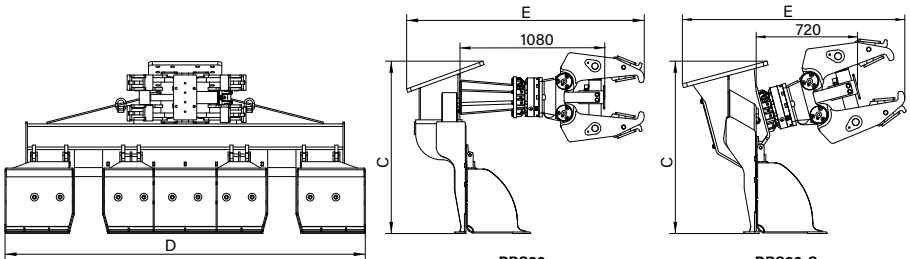
Typ	Gripping range min. - max. (mm/in)	Weight (kg/lbs)	Length D (mm/in)	Height C (mm/in)	Width E (mm/in)	Gripper elements (pcs)	Load capacity (kg/lbs)
RBS20	240 - 300 / 9.5 - 11.8	1,260 / 2,770	2,800 / 110.2	1,320 / 52.0	1,840 / 72.4	4	2,000 / 4,400
RBS20-S	240 - 300 / 9.5 - 11.8	1,160 / 2,552	2,800 / 110.2	1,220 / 48.0	1,570 / 61.8	4	2,000 / 4,400

Package consists of: sleeper changing unit with ballast shield and 3 bolt-on ballast buckets, KINSHOFER rotator KM 15 F273/273, non-return valve

Accessories

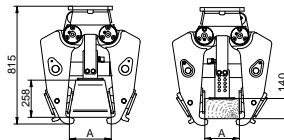
Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620

Note: for adapters see mounting options.



RBS20

RBS20-S



Internal pads and adjustable plunge depth allow the gripping of **MonoBloc** sleepers of different sizes and material (concrete, wood)

External pads to grip **BiBloc** concrete sleepers by opening the hydraulic gripper



Requirements of Excavator

Two hydraulic circuits needed.

Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 20 MPa (200 bar) / 2,880 psi	max. 35 MPa (350 bar) / 5,040 psi	50 - max. 75 l/min / 13.2 - max. 19.8 GPM	20 - max. 50 l/min / 5.3 - max. 13.2 GPM

The new undercutter is the ideal tool to remove ballast from under already positioned railtracks, e.g. to exchange damaged sleepers. Especially flexible and mobile in combination with a **NOX** Tiltrotator. The Undercutter is suitable for road rail excavators with 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Movability:** the undercutter can be mounted to a NOX Tiltrotator or another already existing one.
- ▷ **Flexibility:** available in three different lengths.
- ▷ **Easy chain exchange:** the chain can easily be changed, thus reducing downtimes.
- ▷ **Efficient:** the undercutter goes under sleepers and rails from the side and cuts out the ballast bed. Damaged sleepers can easily be unscrewed and exchanged, before bringing back and tamping the ballast.
- ▷ **Automatic, hydraulic chain tensioning.**



Undercutter

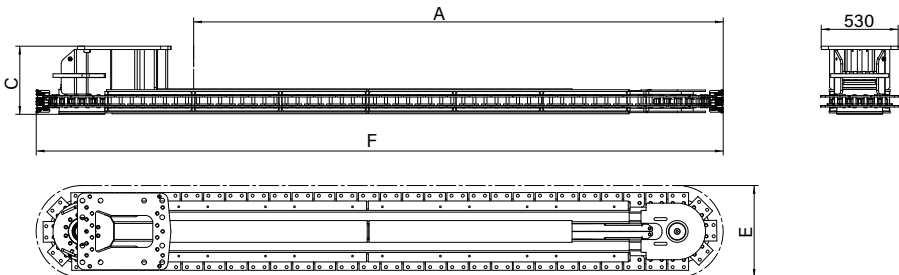
Type	Total length F (mm/in)	Cutting depth max. A (mm/in)	Cutting width E (mm/in)	Blade height (mm/in)	Weight (kg/lbs)	Height C (mm/in)
KUC24-245	3,540 / 139.4	2,450 / 96.5	630 / 24.8	170 / 6.7	1,100 / 2,420	470 / 18.5
KUC24-305	4,140 / 163.0	3,050 / 120.1	630 / 24.8	170 / 6.7	1,200 / 2,640	470 / 18.5
KUC24-365	4,740 / 186.6	3,650 / 143.7	630 / 24.8	170 / 6.7	1,300 / 2,860	470 / 18.5

Package consists of: undercutter, chain

Accessories

Type	Description
KM 690 20t	adapter for rigid mount up to 20t / 44,000 lbs
KM 690 27t	adapter for rigid mount up to 27t / 59,400 lbs
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620

Note: for adapters see mounting options.



Requirements of Excavator

Operating pressure
max. 22 MPa (220 bar) / 3,170 psi

Recommended oil flow
100 - max. 120 l/min / 26.4 - max. 31.7 GPM

With the sleeper layer RUS05 concrete sleepers can be taken at their center and then be moved easily and effectively - for road rail excavators from 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Synchronized gripping arms** embrace the sleepers.
- ▷ **Efficiency:** several concrete sleepers are clamped together at their center at the same time by hydraulic grippers and then layed into the ballast bed. This saves time compared to placing sleepers individually.
- ▷ **Safety:** a special holding valve provides a safe grip - even if pressure drops.
- ▷ **Variable gripping range:** the position of the traversing arms can vary within the specified range.
- ▷ **Flexibility:** suitable for nearly all types of waisted sleepers. Height stop adjustable.
- ▷ **For narrow areas** close to sidetracks and foundations, as the layer grabs the sleepers in the center.
- ▷ **Precise positioning** thanks to the mounted 10t-rotator with 4 oil ducts and hose guard.
- ▷ **Including rack** for storage.
- ▷ **Adjustable sleeper distance:** 600mm / 620mm / 650mm (23.6 in / 24.4 in / 25.6 in).



Sleeper Layer RUS05

Type	Gripping range	Weight (kg/lbs)	Length B (mm/in)	Height C (mm/in)	Width E (mm/in)	Number of grip tongs (pcs)	Jaw width (mm/in)	Sleeper width (mm/in)	Weight single sleeper max. (kg/lbs)
	A min. - max. (mm/in)								
RUS05	150 - 265 / 5.9 - 10.4	1,200 / 2,640	2,820 / 111	830 / 32.7	825 / 32.5	5	330 / 13	300 / 320 11.8 / 12.6	350 / 770
RUS05c	150 - 265 / 5.9 - 10.4	1,290 / 2,838	2,820 / 111	1,750 / 68.9	825 / 32.5	5	330 / 13	300 / 320 11.8 / 12.6	350 / 770
RUS05 Atlas	150 - 265 / 5.9 - 10.4	1,300 / 2,860	2,820 / 111	1,330 / 52.4	825 / 32.5	5	330 / 13	300 / 320 11.8 / 12.6	350 / 770

RUS05 package consists of: sleeper layer, counter-balance valve and storage rack

RUS05c package consists of: sleeper layer, KINSHOFER rotator with hose guard KM 10 F173-180-4DD, head plate with \varnothing 50mm / 1.97 in, upper suspension with pendulum damper KM 511, counter-balance valve and storage rack

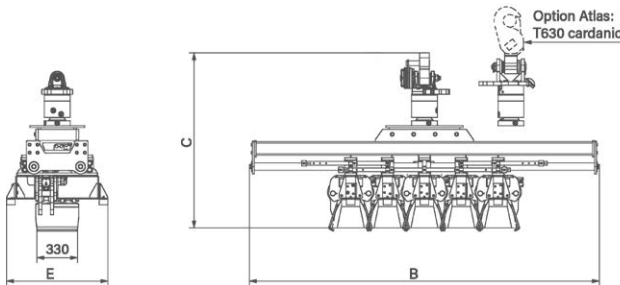
RUS05 Atlas package consists of: sleeper layer, KINSHOFER rotator with hose guard KM 10 F173-180-4DD, head plate suitable for Atlas T630 upper suspension, counter-balance valve and storage rack

* Version with 3 or 4 grip tongs on request

Accessories

Type	Description
T630 cardanic	upper suspension with pendulum damper for "Atlas"
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620
KM 980-2 2t-8t c	solenoid valve KM 980-2 for 12/24 V. complete attachment kit including assembly components for extension to the third hydraulic control circuit

- Notes:**
- Three hydraulic circuits or two hydraulic circuits plus one solenoid valve needed!
 - For adapters see mounting options.



Requirements of Excavator

Operating pressure
max. 20 MPa (200 bar) / 2,880 psi

Recommended oil flow
25 - max. 50 l/min / 6.5- max. 13 GPM

With the Sleeper Layer RUS2 05, concrete sleepers can be taken by their ends and then moved easily and effectively – for road rail excavators from 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Efficiency:** several concrete sleepers are clamped together at the same time by hydraulic grippers and then layed into the ballast bed. Thanks to a follow-up control, the sleepers are aligned at the front side. This saves time compared to placing sleepers individually.
- ▷ **Safety:** a special holding valve provides a safe grip – even if pressure drops.
- ▷ **Variable gripping range:** the position of the traversing arms can vary within the specified range.
- ▷ **Flexibility:** suitable for nearly all types of waisted sleepers. Height stop adjustable. Adjustable to different sleeper lengths.
- ▷ **Precise positioning** thanks to the mounted 10t rotator with 4 oil ducts and hose guard.
- ▷ **Adjustable sleeper distance:** 600mm / 620mm / 650mm (23.6 in / 24.4 in / 25.6 in).



Sleeper Layer RUS2 05

Type	Gripping range	Weight	Number of grip tongs	Jaw width	Sleeper width	Weight single sleeper max. (kg/lbs)
	for sleeper length					
	A (mm/in)	(ca. kg/lbs)	(pcs)	(mm/in)	(mm/in)	
RUS2 05	2,400 - 2,800 / 94.5 - 110.2	1,505 / 3,311	5	180 / 7.1	280/300/320 / 11.0/11.8/12.6	350 / 770
RUS2 05c	2,400 - 2,800 / 94.5 - 110.2	1,595 / 3,509	5	180 / 7.1	280/300/320 / 11.0/11.8/12.6	350 / 770
RUS2 05 Atlas	2400 - 2800 / 94.5 - 110.2	1,610 / 3,542	5	180 / 7.1	280/300/320 / 11.0/11.8/12.6	350 / 770

RUS2 05 package consists of: sleeper layer and counter-balance valve

RUS2 05c package consists of: sleeper layer, KINSHOFER rotator with hose guard KM 10 F173-180-4DD, head plate with ø 50mm / 1.97 in, upper suspension with pendulum damper KM 511 and counter-balance valve

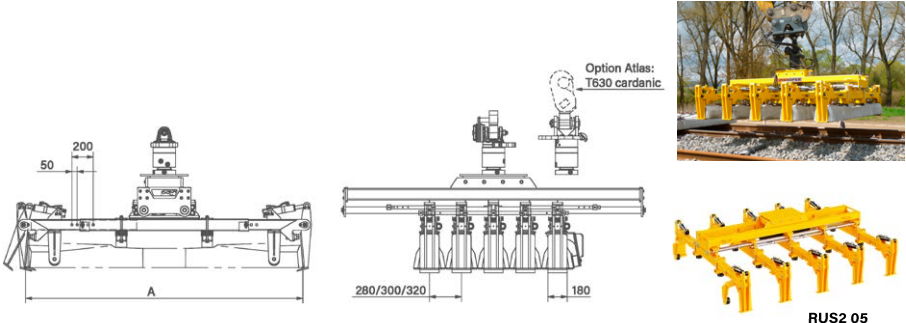
RUS2 05 Atlas package consists of: sleeper layer, KINSHOFER rotator with hose guard KM 10 F173-180-4DD, head plate suitable for Atlas T630 upper suspension and counter-balance valve

* Version with 3 or 4 grip tongs on request

Accessories

Type	Description
T630 cardanic	upper suspension with pendulum damper for "Atlas"
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620
KM 980-2 2t-8t c	solenoid valve KM 980-2 for 12/24 V. complete attachment kit including assembly components for extension to the third hydraulic control circuit

- Notes:**
- Three hydraulic circuits or two hydraulic circuits plus one solenoid valve needed!
 - For adapters see mounting options.



Requirements of Excavator

Operating pressure
max. 20 MPa (200 bar) / 2,880 psi

Recommended oil flow
25 - max. 50 l/min / 6.5- max. 13 GPM

The SP20H Double Ballast Plough is the ideal tool to collect or spread ballast and gravel - for road rail excavators from 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Easy to use:** the plough is pushed along the track on the rails while distributing the ballast evenly on the track.
- ▷ **For different loose materials** such as gravel, ballast, etc.
- ▷ **Adjustable plough depth** (4 x adjustable).
- ▷ **Different couplings** available.
- ▷ **Robust construction** without protruding parts.
- ▷ **Side flaps tiltable** $\pm 45^\circ$.



Double Ballast Plough SP20H

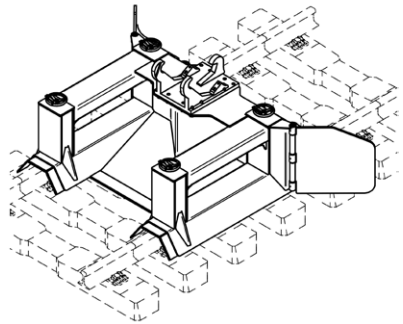
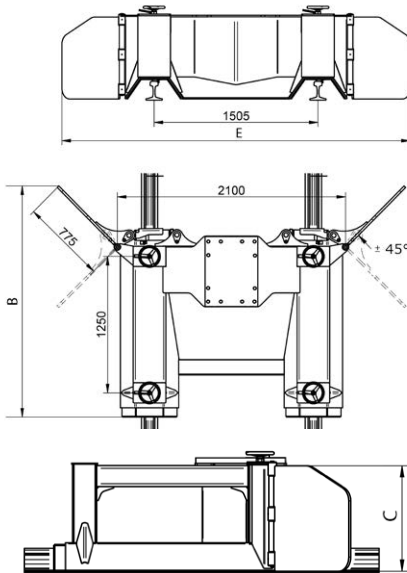
Type	Weight (kg / lbs)	Length B max. (mm / in)	Height C (w/o coupling) (mm / in)	Width E max. (mm / in)	For rail distance (mm / in)	Tilt angle side flaps (°)
SP20H	1150 / 2530	2120 / 83.5	750 / 29.5	3200 / 126.0	1505 / 59.3	± 45

Package consists of: double ballast plough

Accessories

Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620

Note: for adapters see mounting options



below:
with lateral flaps folded away



Requirements of Excavator

Three hydraulic circuits or two hydraulic circuits plus one solenoid valve needed

Operating pressure
max. 20 - 32 MPa (200 - 320 bar) / max. 2,880 - 4,610 psi

Recommended oil flow
50 - max. 75 l/min / 13.2 - max. 19.8 GPM

Ballast Brush

SKB-Ballast



14 - 24t

The SKB-Ballast Brush is the perfect excavator-tool for levelling and distributing ballast. Cleaning the track after filling it up with ballast has never been easier - for road rail excavators from 14t - 24t / 30,800 - 52,800 lbs operating weight.

Especially efficient in combination with a **nox** tiltrotator. Available for loaders as well.

- ▷ **Wide range of widths:** 1,000 - 3,000 mm / 39.37 - 118.11 in available, sweep diameter is 950 mm / 37.40 in.
- ▷ **Efficiency:** can be equipped with different brushes for different applications. The same frame can be used for different roller brushes
- ▷ Optional: **synthetic brush for snow removal** available.
- ▷ **Rubber bristles** sweep away ballast without damaging rails or sleepers.
- ▷ **Optional: Robust rubber skirts** avoid unintended spreading of the ballast.
- ▷ **Two hydraulic motors** (both bidirectional: forward & backward).



Ballast Brush SKB-Ballast

Type	Bristle length (mm/in)	Sweep diameter (mm/in)	Weight (kg/lbs)	Width (mm/in)	Height (mm/in)	Depth (mm/in)
SKB-Ballast 10	330 / 13	950 / 37.4	280 / 616	1000 / 39.4	1200 / 47.2	1200 / 47.2
SKB-Ballast 15	330 / 13	950 / 37.4	350 / 770	1500 / 59.1	1200 / 47.2	1200 / 47.2
SKB-Ballast 20	330 / 13	950 / 37.4	380 / 836	2000 / 78.7	1200 / 47.2	1200 / 47.2
SKB-Ballast 26	330 / 13	950 / 37.4	420 / 924	2600 / 102.4	1200 / 47.2	1200 / 47.2
SKB-Ballast 30	330 / 13	950 / 37.4	475 / 1045	3000 / 118.1	1200 / 47.2	1200 / 47.2

Package consists of: ballast brush, short hoses, rubber skirts

Accessories

Type	Description
T650 rigid	bolt-on adapter for "Atlas" quick coupler T620

Note: for adapters see mounting options



Exchangeable:
Rubber brush of the SKB-Ballast



SKB-Ballast with raised rubber skirt (optional)

Safer working on the track: a **SKB-Ballast** with complete rubber protection skirts (for DE, FR, GB; for US and NL only front skirts required)



The SKB-Ballast **without** protection skirts (in Scandinavia) shows better how the ballast brush works



Requirements of Excavator

One hydraulic circuit needed

Operating pressure
max. 20 MPa (200 bar) / 2,880 psi

Recommended oil flow
60 - max. 200 l/min / 15.9 - max. 52.8 GPM

14 - 24t  KM 333 SleeperE

Sleeper Grapple

The sleeper loading grapple KM 333 SleeperE can grip and load five concrete sleepers at the same time. It is ideal for road rail excavators from 14t - 24t / 30,800 - 52,800 lbs operating weight.

- ▷ **Low weight.**
- ▷ **Efficiency:** Five concrete sleepers are clamped together at the same time by two hydraulic compression rails and then layed into the ballast bed. The loading / unloading of five sleepers simultaneously saves time compared to individual handling.
- ▷ **Precise synchronisation of the arms** as a result of two in series double acting hydraulic cylinders.
- ▷ **Safety** through internal pressure relief valve and non-return valve (safe clamping force at pressure drop).
- ▷ **Flexibility:** All railway sleepers B70W / B58W / BS66 can be taken thanks to an extremely wide and variable gripping area (1,795 - 2,865 mm / 70.7 - 112.8 in).
- ▷ **Long life** due to generously dimensioned bearings, integrated grease reservoir, automatic wear compensation of main bearing, spherical central bearing for the cylinders.



Package Sleeper Grapple KM 333 SleeperE

Type	Plunge depth (mm/in)	Load capacity (kg/lbs)	Gripping range min. - max. (mm/in)	Height (incl. rotator) (mm/in)	Weight (kg/lbs)
KM 333 SleeperE	400 / 15.8	2,500 / 5,500	1795 - 2865 / 70.7 - 112.8	890 / 35.0	530 / 1,166

Package consists of: sleeper loading grapple, KINSHOFER rotator KM 10 F180-50, short hoses KM 203 01, compression rails (length 1,840mm / 72.4 in), pressure relief valve, non-return valve

Note: the stated load capacity does not take into account the constitution of the charge (surface, mode of packing etc.). The load capacity is not valid in the case of low, unbound curbstones or concrete blocks.

Package "Atlas" Sleeper Grapple KM 333 SleeperE Atlas

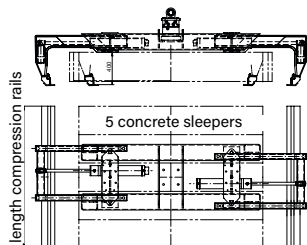
Type	Plunge depth (mm/in)	Load capacity (kg/lbs)	Gripping range min. - max. (mm/in)	Height (incl. rotator) (mm/in)	Weight (kg/lbs)
KM 333 SleeperE Atlas	400 / 15.8	2,500 / 5,500	1795 - 2865 / 70.7 - 112.8	890 / 35.0	530 / 1,166

Package consists of: sleeper loading grapple, KINSHOFER rotator KM 10 F180-50 with head plate for Atlas T630, short hoses KM 203 01, compression rails (length 1,840mm / 72.4 in), pressure relief valve, non-return valve

Accessories

Type	Description
KM 501 13t-25t	upper suspension without pendulum damper
T630 cardanic	upper suspension with pendulum damper for "Atlas"

Note: for adapters see mounting options



Atlas head plate
for T630



Requirements of Excavator

Operating pressure
max. 20 - 32 MPa (200 - 320 bar) / max. 2,880 - 4,608 psi

Recommended oil flow
50 - max. 75 l/min / 13.2 - max. 19.8 GPM

Robust clamshell bucket with low-maintenance *HPXdrive* and extra-narrow exchangeable shells to fit perfectly in between rail sleepers.

- ▷ ***HPXdrive* - the revolutionary concept for hydraulically operated grabs!**
The rotation of the arms of the grab is generated by two hollow shafts, which run opposed and have a helix thread, hydraulically driven by a single piston. **No hydraulic cylinder required!**
- ▷ **50% longer life cycle.** The drive unit runs in a permanent oil bath – no lubrication necessary. Resistant against dirt and blows due to the compact design.
- ▷ ***HPXdrive* - Constant closing forces** during the entire digging process (22 kN / 4840 lbf at an internal operating pressure of 26 MPa / 3,770 psi).
- ▷ Different applications possible thanks to **shell exchange system**.
- ▷ **Long life** is ensured due to the use of 500 HB steel in the manufacture of cutting edges.



Request? [scs@kinshofer.com](https://www.kinshofer.com)

Package Clamshell Bucket C08HPX

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liter/cy.)	Number teeth	Weight (kg/lbs)	Load capacity (kg/lbs)
C08HPX-28	280 / 11.0	1,250 / 49.2	940 / 37.0	95 / 0.12	3	315 / 693	3,000 / 6,600

Package consists of: clamshell bucket, bolt-on teeth, **KINSHOFER** rotator, non-return valve and hose protection

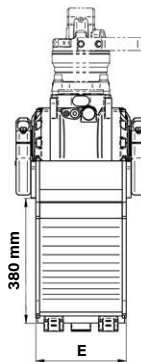
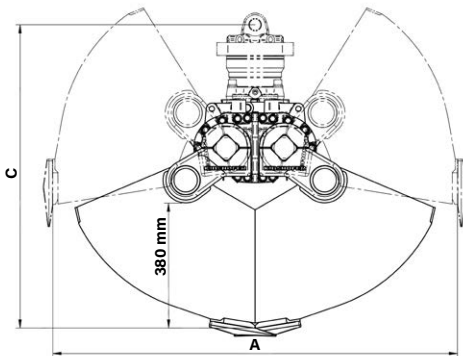
KINSHOFER Rotator

Integrated in a single unit with the *HPXdrive*, no more connecting hoses. Continuous rotation. Overload protection ensured by pressure relief valves.

Type	Upper dimension (width x pin-Ø) (mm/in)	Torque (Nm/ft.lbs)	Bending moment max. (Nm/ft.lbs)
KM 04 F140-30USE	84 x 30 / 3.31 x 1.18	1,000 / 740	8,500 / 6,270

Accessories

Type	Description
KM 501 1t-8t	upper suspension without pendulum damper
KM 511 1t-8t	upper suspension with pendulum damper
KM 510 1t-8t	single pendulum damper to upgrade the upper suspension KM 501 1t-8t / 2,200-17,600 lbs adapters for quick change systems from other manufacturers or different sizes on request



free extension
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Requirements of Excavator

Operating pressure at oil flow (open/close)

26 MPa (260 bar) at max. 75 l/min / 3,770 psi at max. 19.8 GPM
26 - 32 MPa (260 - 320 bar) at max. 40 l/min / 3,770 - 4,610 psi at max. 10.6 GPM

Operating pressure at oil flow (rotate)

32 MPa (320 bar) at 20 - max. 50 l/min / 4,610 psi at 5.3 - max. 13.2 GPM

5 - 11t



C11TR HPX

Clamshell Bucket with **HPXdrive** for Tiltrotators

Robust clamshell bucket with low-maintenance **HPXdrive** and extra-narrow exchangeable shells to fit perfectly in between rail sleepers.

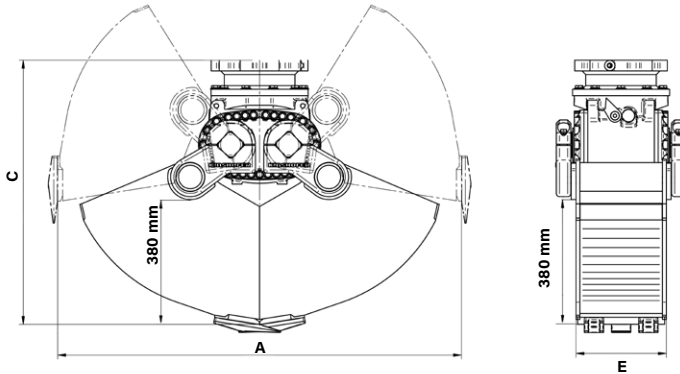
- ▷ **HPXdrive** - the revolutionary concept for hydraulically operated grabs! The rotation of the arms of the grab is generated by two hollow shafts, which run opposed and have a helix thread, hydraulically driven by a single piston. **No hydraulic cylinder required!**
- ▷ **50% longer life cycle.** The drive unit runs in a permanent oil bath - no lubrication necessary. Resistant against dirt and blows due to the compact design.
- ▷ **HPXdrive** - **Constant closing forces** during the entire digging process (22 kN / 4840 lbf at an internal operating pressure of 26 MPa / 3,770 psi).
- ▷ Different applications possible thanks to **shell exchange system.**
- ▷ **Long life** is ensured due to the use of 500 HB steel in the manufacture of cutting edges.
- ▷ **Ideal for our NOX Tiltrotator TR11NOX.**



Clamshell Bucket C11TR HPX

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liter/c.y.)	Number teeth	Weight (kg/lbs)	Load capacity (kg/lbs)
C11TR-28 HPX	280 / 11.0	1,250 / 49.2	840 / 33.1	95 / 0.12	3	280 / 616	3,000 / 6,600

Package consists of: clamshell bucket, hydraulic block incl. hoses



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Requirements of Excavator

Operating pressure at oil flow (open/close)

26 MPa (260 bar) at max. 75 l/min / 3,770 psi at max. 19.8 GPM
26 - 32 MPa (260 - 320 bar) at max. 40 l/min / 3,770 - 4,610 psi at max. 10.6 GPM

KINSHOFER Shell Exchange System C-VE

Robust grabs for excavators with revolutionary exchange system in a single device. As a new demand on site arises, the attachment can be exchanged and the new application can commence. Easy remounting of shells for excavating, landscaping, laying pipes, logging, rail track handling etc.

- ▷ **Efficiency:** only the shells are replaced; exchange is possible with only one person.
- ▷ **Fastness:** easy exchange of the lynch pin from the change-over system within 4 minutes, no hydraulic work necessary.
- ▷ **Robust technics:** compact design through the integrated rotator. Robust shell bearing with coexisting change mechanism.



Rock tines



Excavating shells



Excavating shells railway



Pipe grab



Module



Foundation shells



Timber tines



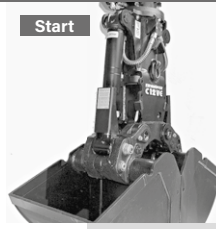
Hay and forestry tines



Well shaft shells

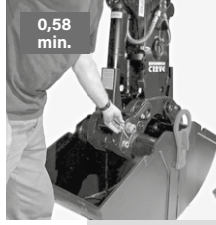


Start



Close bucket and set it down. Mount the exchange support.

0,58 min.



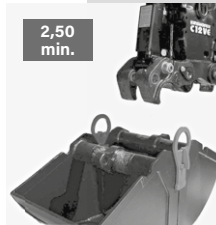
Remove the lynch pin from the change-over system.

1,67 min.



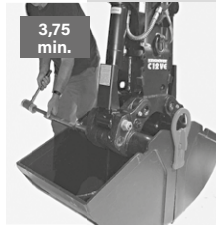
Remove the change-over pin with extraction tool.

2,50 min.



Position the bucket carrier over the new attachment and close the locking unit hydraulically.

3,75 min.



Insert the change-over pin and fasten the lynch pin.

4 min. finished



Remove the exchange support. Ready for use!

4 - 9t



C08VE

Clamshell Bucket with Exchangeable Shells

Clamshell bucket with exchangeable shells and vertical cylinder for excavators from 4t / 8,800 lbs to 9t / 19,800 lbs operating weight - through quick and easy exchange of shells ideal for different applications, for excavation operations, landscaping, trench digging, handling of logs etc. The shells can be changed in less than four minutes.

- ▶ **Economic solution** as only the shells have to be exchanged for another application - bucket carrier, hydraulic cylinder and bearings are integrated into the unit.
- ▶ **Long life is ensured** due to the use of 500 HB steel in the manufacture of cutting edges.
- ▶ **Reduced wear** resulting from generously dimensioned bearing system.
- ▶ **Excellent digging characteristics** are the result of high closing forces (26 kN / 5,720 lbf at an operating pressure of 32 MPa / 4,608 psi).



C08VE-28

Clamshell Bucket C08VE

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Height C min. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Capacity (kg/lbs)
C08VE-28	280 / 11.0	1,330 / 52.4	1,520 / 59.9	1,380 / 54.3	100 / 0.13	3	325 / 715	3,000 / 6,600

Package consists of: clamshell bucket, bolt-on teeth, rotator KM 04 F140-30USE with hose guard, shell exchange kit and non-return valve

Exchangeable Shells for Clamshell Bucket C08VE-S

Type	Width E (mm/in)	Opening A (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Capacity (kg/lbs)
C08VE-28S	280 / 11.0	1,330 / 52.4	100 / 0.13	3	125 / 275	3,000 / 6,600
C08VE-32S	325 / 12.8	1,330 / 52.4	115 / 0.15	3	130 / 286	3,000 / 6,600
C08VE-40S	400 / 15.8	1,330 / 52.4	145 / 0.19	3	135 / 297	3,000 / 6,600
C08VE-50S	500 / 19.7	1,330 / 52.4	185 / 0.24	5	145 / 319	3,000 / 6,600
C08VE-60S	600 / 23.6	1,330 / 52.4	220 / 0.29	5	155 / 341	3,000 / 6,600
C08VE-80S	800 / 31.5	1,330 / 52.4	300 / 0.39	9	190 / 418	3,000 / 6,600

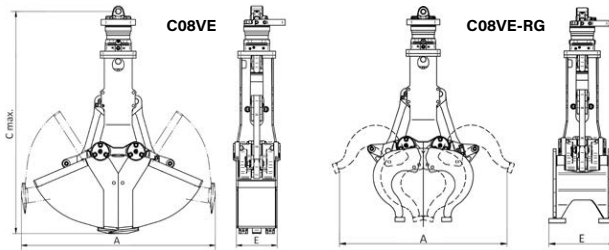
Exchangeable Tines for Rail Grab C08VE-S RG

Type	Width E (mm/in)	Opening A (mm/in)	Weight (kg/lbs)	Capacity (kg/lbs)
C08VE-48S RG	480 / 18.9	1,205 / 47.4	100 / 220	3,000 / 6,600

Note: shells are interchangeable. Special designs available on request

Accessories

Type	Description
KM 501 1t-8t	upper suspension without pendulum damper
KM 511 1t-8t	upper suspension with pendulum damper
	for other adapters see mounting options
KM 680 5t-8t	scraper



Requirements of Excavator

Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 32 MPa (320 bar) / 4608 psi	max. 32 MPa (320 bar) / 4608 psi	40 - max. 90 l/min / 10.57 - max. 23.78 GPM	15 - max. 50 l/min / 3.96 - max. 13.21 GPM

Clamshell bucket with exchangeable shells and vertical cylinders for excavators with 13t / 28,600 lbs to 18t / 39,600 lbs operating weight. Ideal for the versatile use in construction, landscaping, canal building, forestry etc. due to the fast and easy exchange of shells within only 4 minutes.

- ▷ **Economic solution** as only the shells are exchanged. Shell carrier, hydraulics and bearings remain unchanged.
- ▷ **Long life** thanks to the use of cutting edge material 500 HB.
- ▷ **Low wear** due to generously dimensioned steel bearings with special coating.
- ▷ Excellent digging behaviour thanks to **high closing forces**.
- ▷ Shells with width 280 mm / 11 in: reinforced version with 15 mm / 0.6 in strong **Hardox side walls**.



C18VE-28-Rail

Request? scs@kinshofer.com

Clamshell Bucket C18VE-Rail							
Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Capacity (kg/lbs)
C18VE-28-Rail	280 / 11.0	1,350 / 53.2	1,460 / 57.5	60 / 0.08	3	480 / 1,056	4,500 / 9,900
C18VE-30-Rail	300 / 11.8	1,410 / 55.5	1,470 / 57.9	80 / 0.10	3	535 / 1,177	4,500 / 9,900
C18VE-40-Rail	400 / 15.7	1,330 / 52.4	1,500 / 59.0	100 / 0.13	3	560 / 1,232	4,500 / 9,900
C18VE-50-Rail	500 / 19.7	1,330 / 52.4	1,500 / 59.0	125 / 0.16	5	575 / 1,265	4,500 / 9,900
C18VE-60-Rail	600 / 23.6	1,330 / 52.4	1,500 / 59.0	150 / 0.19	5	605 / 1,331	4,500 / 9,900
C18VE-80-Rail	800 / 31.5	1,330 / 52.4	1,500 / 59.0	200 / 0.26	7	655 / 1,441	4,500 / 9,900
C18VE-100-Rail	1,000 / 39.4	1,330 / 52.4	1,500 / 59.0	250 / 0.32	9	705 / 1,551	4,500 / 9,900

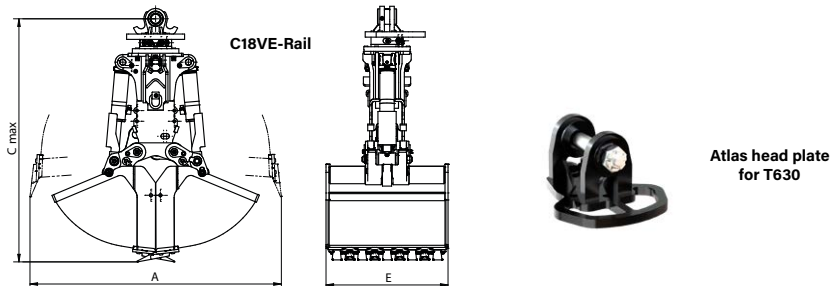
Package consists of: clamshell bucket, bolt-on teeth, KINSHOFER rotator KM 10 F275-60 with head plate Kinshofer, hose guard, two welded hooks, shell exchange kit and non-return valve

Clamshell Bucket C18VE-Rail Version Atlas							
Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Capacity (kg/lbs)
C18VE-28-Rail Atlas	280 / 11.0	1,330 / 52.4	1,500 / 59.0	60 / 0.08	3	540 / 1,188	4,500 / 9,900

Package consists of: clamshell bucket, bolt-on teeth, KINSHOFER rotator with head plate for Atlas T630, hose guard, two welded hooks, shell exchange auf and non-return valve

Note: other versions on request.

Accessories	
Type	Description
KM 501 13t-25t	upper suspension without pendulum damper
KM 511 13t-25t	upper suspension with pendulum damper
T630 cardanic	upper suspension with pendulum damper for "Atlas"
KM 680 C18VE-Rail	scraper



Requirements of Excavator			
Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 35 MPa (350 bar) / 5040 psi	max. 32 MPa (320 bar) / 4608 psi	40 - max. 120 l/min / 10.6 - max. 31.7 GPM	20 - max. 50 l/min / 5.3 - max. 13.2 GPM

The C18VE/RIG is a clamshell bucket with two vertical cylinders, but without rotator for rigid mount on excavators with an operating weight of 13t - 18t / 28600 - 39000 lbs. Above the head plate, an upper bracket for a quick coupler can be mounted directly. Ideal, if used in combination with a tiltrotator and Quick Exchange Shell System C-VE: changing various shells (types, widths) and other tools in four minutes.

- ▶ **Reinforced:** to endure the forces caused by its rigid mounting, the main carrier of this C18VE type is specially reinforced. The 280 mm / 11 in wide shells have extra reinforced 15 mm / 0.6 in strong Hardox side walls.
- ▶ An **economic solution** as only the shells have to be exchanged to suit application – bucket carrier, hydraulics and bearings are integrated into the main carrier.
- ▶ **Long life** is ensured due to the use of **500 HB steel** in the manufacture of **cutting edges** and a generously dimensioned **bearing system with special coating**.
- ▶ **Excellent digging characteristics** are the result of **high closing forces**.
- ▶ **Option:** with special cardanic system, the clamshell can also be mounted in free suspension under a tiltrotator.
- ▶ **Safe:** a non-return valve ensures continuous safety of the load, even if the pressure drops.
- ▶ **Low overall height:** ideal for rail applications.



Clamshell Bucket for Rigid Mount C18VE/RIG-Rail

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Length F (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Load capacity (kg/lbs)
C18VE-28/RIG-Rail	280 / 11.0	1330 / 52.4	1280 / 50.4	1020 / 40.2	60 / 0.08	3	475 / 1045	4500 / 9900

Package consists of: hydraulic carrier unit for rigid mount, shells with bolt-on teeth, 2 welded eyes and non-return valve

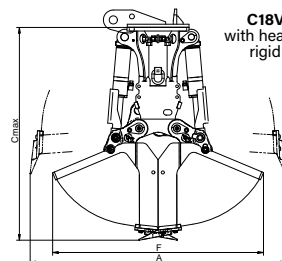
Exchangeable Shells

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C18VE-28S-Rail	280 / 11.0	1,350 / 53.2	1,240 / 48.8	60 / 0.08	3	150 / 330	4,500 / 9,900	54 / 11,880
C18VE-30S-Rail	300 / 11.8	1,410 / 55.5	1,250 / 49.2	80 / 0.10	3	125 / 275	4,500 / 9,900	51 / 11,220
C18VE-40S-Rail	400 / 15.8	1,330 / 52.4	1,280 / 50.4	100 / 0.13	3	170 / 374	4,500 / 9,900	54 / 11,880
C18VE-50S-Rail	500 / 19.7	1,330 / 52.4	1,280 / 50.4	125 / 0.16	5	185 / 407	4,500 / 9,900	54 / 11,880
C18VE-60S-Rail	600 / 23.6	1,330 / 52.4	1,280 / 50.4	150 / 0.20	5	215 / 473	4,500 / 9,900	54 / 11,880
C18VE-80S-Rail	800 / 31.5	1,330 / 52.4	1,280 / 50.4	200 / 0.26	7	265 / 583	4,500 / 9,900	54 / 11,880
C18VE-100S-Rail	1,000 / 39.4	1,330 / 52.4	1,280 / 50.4	250 / 0.33	9	315 / 693	4,500 / 9,900	54 / 11,880

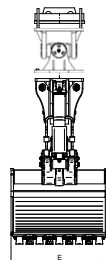
Accessories

Type	Description
KM 690 15t	adapter for rigid mounting – up to 15t / 33000 lbs
KM 690 20t	adapter for rigid mounting – up to 20t / 44000 lbs
T650 rigid	bolt-on adapter for „Atlas“ quick change T620
KSW10 rigid	bolt-on-adapter for „System L-Lock“ KMS10/KHS10 for rigid mounting – up to 19t / 41800 lbs
KM 680 C18VE-Rail	scraper
KM 695 18t cardanic	adapter for cardanic mounting - up to 18t / 39600 lbs (cardanic joint)

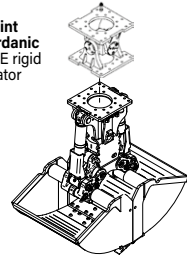
Note: other shells and tines and more attachments available on request. Other mounting options see accessories.



C18VE rigid
with head plate for
rigid mount



Optional:
Cardanic joint
KM 695 18t cardanic
for use on C18VE rigid
with a tiltrotator



Requirements of Excavator

Operating pressure
(open/close)
max. 35 MPa (350 bar) / 5040 psi

Recommended oil flow
(open/close)
40 - max. 120 l/min / 10.6 - max. 31.7 GPM

The clamshell bucket C18VE-HD with exchangeable shells and two vertical cylinders is equipped with a sturdy rotation and thus ideal for the rigid mount use on excavators with 13t - 18t / 28600 - 39000 lbs operating weight.

- ▶ An **economic solution** as only the shells have to be exchanged to suit application – bucket carrier, hydraulics and bearings are integrated into the main carrier.
- ▶ **Reinforced:** to endure the forces caused by its rigid mounting, the main carrier of this C18VE type is specially reinforced. The 280 mm / 11 in wide shells have extra reinforced 15 mm / 0.6 in strong Hardox side walls.
- ▶ **Long life** is ensured due to the use of **500 HB steel** in the manufacture of **cutting edges** and a generously dimensioned **bearing system with special coating**.
- ▶ **Low overall height:** ideal for rail applications.
- ▶ **Safe:** a non-return valve ensures continuous safety of the load, even if the pressure drops.
- ▶ **Excellent digging characteristics** are the result of **high closing forces**.
- ▶ **Strong and sturdy rotation** with large 4-point bearing and 2 motors for a high torque of 5700 Nm / 4200 ft.lbs.



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Clamshell Bucket for Rigid Mount C18VE-HD

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Load capacity (kg/lbs)
C18VE-28-HD	280 / 11.0	1330 / 52.4	1655 / 65.2	60 / 0.08	3	780 / 1716	4500 / 9900

Package consists of: clamshell bucket, bolt-on teeth, KINSHOFER rotation, 2 welded eyes, shell exchange kit and non-return valve

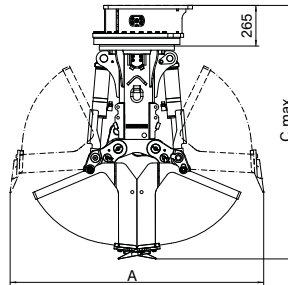
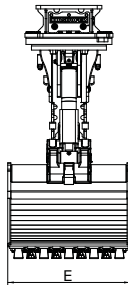
Exchangeable Shells

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (liters/c.y.)	Number of teeth	Weight (kg/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
C18VE-28S-Rail	280 / 11.0	1,350 / 53.2	1,240 / 48.8	60 / 0.08	3	150 / 330	4,500 / 9,900	54 / 11,880
C18VE-30S-Rail	300 / 11.8	1,410 / 55.5	1,250 / 49.2	80 / 0.10	3	125 / 275	4,500 / 9,900	51 / 11,220
C18VE-40S-Rail	400 / 15.8	1,330 / 52.4	1,280 / 50.4	100 / 0.13	3	170 / 374	4,500 / 9,900	54 / 11,880
C18VE-50S-Rail	500 / 19.7	1,330 / 52.4	1,280 / 50.4	125 / 0.16	5	185 / 407	4,500 / 9,900	54 / 11,880
C18VE-60S-Rail	600 / 23.6	1,330 / 52.4	1,280 / 50.4	150 / 0.20	5	215 / 473	4,500 / 9,900	54 / 11,880
C18VE-80S-Rail	800 / 31.5	1,330 / 52.4	1,280 / 50.4	200 / 0.26	7	265 / 583	4,500 / 9,900	54 / 11,880
C18VE-100S-Rail	1,000 / 39.4	1,330 / 52.4	1,280 / 50.4	250 / 0.33	9	315 / 693	4,500 / 9,900	54 / 11,880

Accessories

Type	Description
KM 690 15t	adapter for rigid mounting – up to 15t / 33000 lbs
KM 690 20t	adapter for rigid mounting – up to 20t / 44000 lbs
T650 rigid	bolt-on adapter for „Atlas“ quick change T620
KSW10 rigid	bolt-on-adapter for „System L-Lock“ KMS10/KHS10 for rigid mounting – up to 19t / 41800 lbs
KM 680 C18VE-Rail	scraper

Note: other shells and tines and more attachments available on request. Other mounting options see accessories.

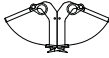







Requirements of Excavator



Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 35 MPa (350 bar) / 5040 psi	max. 14 MPa (140 bar) / 2016 psi	40 - max. 120 l/min / 10.6 - max. 31.7 GPM	25 - max. 45 l/min / 6.6 - max. 11.9 GPM



Exchangeable Shells for C18VE - rigid and cardanic mount

Shells are interchangeable and available in all widths. Fast exchange thanks to shell exchange aid kit.

Type	Width (mm/in)	Opening (incl. teeth) (mm/in)	Total height (mm/in)	Volume (liters/c.y.)	Number of teeth (pcs)	Weight shells only (kg/lbs)	Load capacity (kg/lbs)	Closing forces (kN/lbf)
Excavating Shells			C18VE-40S	C18VE-28S				
C18VE-28S-Rail	280 / 11.0	1,350 / 53.2	1,240 / 48.8	60 / 0.08	3	150 / 330	4,500 / 9,900	54 / 11,880
C18VE-30S-Rail	300 / 11.8	1,410 / 55.5	1,250 / 49.2	80 / 0.10	3	125 / 275	4,500 / 9,900	51 / 11,220
C18VE-40S-Rail	400 / 15.8	1,330 / 52.4	1,280 / 50.4	100 / 0.13	3	170 / 374	4,500 / 9,900	54 / 11,880
C18VE-50S-Rail	500 / 19.7	1,330 / 52.4	1,280 / 50.4	125 / 0.16	5	185 / 407	4,500 / 9,900	54 / 11,880
C18VE-60S-Rail	600 / 23.6	1,330 / 52.4	1,280 / 50.4	150 / 0.20	5	215 / 473	4,500 / 9,900	54 / 11,880
C18VE-80S-Rail	800 / 31.5	1,330 / 52.4	1,280 / 50.4	200 / 0.26	7	265 / 583	4,500 / 9,900	54 / 11,880
C18VE-100S-Rail	1,000 / 39.4	1,330 / 52.4	1,280 / 50.4	250 / 0.33	9	315 / 693	4,500 / 9,900	54 / 11,880

Sleeper Grab Tines								
C18VE-50S RG	500 / 19.7	1,250 / 49.2	1,400 / 55.1	-	-	130 / 286	4,500 / 9,900	44 / 9,680



Multi Purpose Tines								
C18VE-60S A	590 / 23.2	1,660 / 65.4	1,625 / 64.0	180 / 0.24	5	340 / 748	4,500 / 9,900	41 / 9,020



Well Shaft Shells								
C18VE-97S WSG	Ø 970 / 38.2	970 / 38.2	1,410 / 55.5	110 / 0.14	5	170 / 374	4,500 / 9,900	65 / 14,300

Note: larger shells available on request

Exchangeable Shells for C18VE - only cardanic mount

Rail Grab Tines								
C18VE-200S RG2	2,000 / 78.7	990 / 39	1295 / 51	-	-	275 / 605	4,500 / 9,900	68 / 14,960

Hay and Forestry Tines								
A18VE-95S	955 / 37.6	1,830 / 72.0	1685 / 66.3	400 / 0.52	-	340 / 748	4,500 / 9,900	41 / 9,020
A18VE-122S	1,220 / 48	1,835 / 72.2	1725 / 67.9	600 / 0.78		275 / 605	4,500 / 9,900	32 / 7,040

Timber Grab Tines								
T18VE-49S-0,5	490 / 19.3	1,830 / 72.0	1,825 / 71.9	0.50 m ² / 0.33 cords		200 / 440	4,500 / 9,900	30 / 6,600
T18VE-49S-0,6	490 / 19.3	1,975 / 77.8	1,905 / 75	0.60 m ² / 0.40 cords		220 / 484	4,500 / 9,900	33 / 7,260

Package consists of: exchangeable shells, teeth (excavating and well shaft shells), exchange aid kit

Note: special shells available on request

Robust grab for handling several sleepers for excavators with 13 to 18t / 28,600 to 39,600 lbs operating weight.

- ▷ **Long service life** thanks to the use of cutting edge material 500HB.
- ▷ **Low wear** due to generously dimensioned steel bearings and mechanical end stop of the arms.
- ▷ **Rotator** integrated in the center part.
- ▷ Optimal immersion in the wood pile thanks to **wide opening**.
- ▷ **360° endless rotation** directly mounted without short hose connections.
- ▷ Cylinder with **load holding valve and cushioned end positions**.



Request? scs@kinshofer.com

Sleeper Grab T18V-Rail

Type	Width E (mm/in)	Opening A (mm/in)	Height C max. (mm/in)	Volume (m ³ /cords)	Weight (kg/lbs)	Load capacity (kg/lbs)
T18V-Rail	650 / 25.6	2,300 / 90.6	2,092 / 82.4	0.6 / 0.40	620 / 1,364	4,500 / 9,900

Package consists of: grab, KINSHOFER rotator KM 10 F275-60 with head plate Kinshofer Ø 60 mm / 2.36 in, hose guard and non-return valve

KINSHOFER Rotator

Continuous rotation and two oil passages. Overload protection is ensured by pressure relief valves.

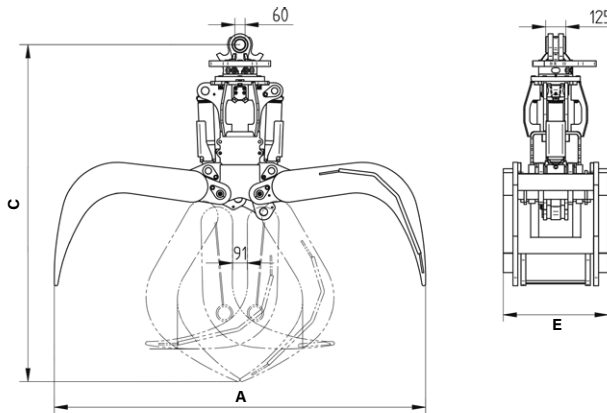
Type	Upper connection (width x pin-Ø) (mm/in)	Torque (Nm/ft.lbs)	Bending moment max. (Nm/ft.lbs)
KM 10 F275-60	125 x 60 / 4.9 x 2.36	2,000 / 10,325	14,000 / 10,325

Accessories

Type	Description
KM 501 13t-25t	upper suspension without pendulum damper
KM 511 13t-25t	upper suspension with pendulum damper
T630 cardanic	upper suspension with pendulum damper for "Atlas"



Atlas head plate for T630



Requirements of Excavator

Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 35 MPa (350 bar) / 5040 psi	max. 32 MPa (320 bar) / 4,610 psi	75 - max. 150 l/min / 19.8 - max. 39.6 GPM	20 - max. 50 l/min / 5.3 - max. 13.2 GPM



The rail grapple KM 632HPX-E Rail with its **HPXdrive** is used for the loading and unloading of rails, but also, with care, handle single sleepers. A non-return valve secures constant pressure even in case of unexpected pressure drop. The revolutionary **HPXdrive** technology guarantees a reliable and virtually maintenance free attachment.

- ▷ **Reliability** of the HPXdrive! The movement of the arms of the grapple is generated by two hollow shafts, which run opposed and have a helix thread, hydraulically driven by a single piston. No more hydraulic cylinder.
- ▷ **Longer life cycle** up to 50%! **Self-lubrication:** The drive unit runs in a permanent oil bath. The compact design makes the HPXdrive resistant to dirt and debris.
- ▷ **Versatility** with different types of shells that can easily be refitted onto the driving unit.
- ▷ **Profitability** through low maintenance costs and longer life cycle.
- ▷ **Precise positioning** thanks to the mounted 360° rotator.
- ▷ **Constant closing force** (34 kN / 7,480 lbf at 26 MPa / 3,744 psi operating pressure) during the entire opening and closing process.



Rail Grapple KM 632HPX-E Rail with 15t **KINSHOFER** Rotator

Type	Width (mm/in)	Height (mm/in)	Weight (kg/lbs)	Closing force (kN/lbf at 26 MPa/3744 psi)	Load capacity (kg/lbs)
KM 632HPX-E Rail	1,000 / 39.4	820 / 32.3	385 / 847	34 / 7,480	2,000 / 4,400

Package consists of: rail grapple, rotator KM 15 F273-273 incl. head plate (pin-Ø 60 mm / 2.76 in), non-return valve

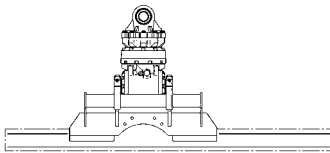
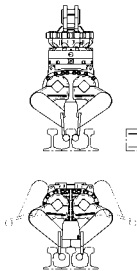
Rail Grapple KM 632HPX-E Rail with 15t **KINSHOFER** Rotator Version Atlas

Type	Width (mm/in)	Height (mm/in)	Weight (kg/lbs)	Closing force (kN/lbf at 26 MPa/3744 psi)	Load capacity (kg/lbs)
KM 632HPX-E Rail Atlas	1,000 / 39.4	820 / 32.3	385 / 847	34 / 7,480	2,000 / 4,400

Package consists of: rail grapple, rotator KM 15 F273-273 incl. head plate for Atlas T630, non-return valve

Accessories

Type	Description
KM 501 13t-25t	upper suspension without pendulum damper
KM 511 13t-25t	upper suspension with pendulum damper
T630 cardanic	upper suspension with pendulum damper for "Atlas"



here with 4t rotator
for the use on
loader cranes



Atlas head plate for T630

KINSHOFER Rotator

Direct connection to HPXdrive, no short hoses. Continuous rotation. Overload protection is ensured by pressure relief valves.

Type	Upper connection (borings / Ø-hole pattern) (mm/in)	Torque (Nm/ft.lbs)	Moment of deflection (Nm/ft.lbs)
KM 15 F273/273	10 x M16 / Ø 273/10.8	2,000 / 1,475	50,000 / 36,875

Requirements of Excavator

Operating pressure
26 MPa (260 bar) / 3,770 psi

Recommended oil flow
50 - max. 75 l/min / 13.2 - max. 19.8 GPM

Mechanic Rail Clamp

RLD-25  4 - 24t

The RLD-25 mechanic rail clamp is a simple, but robust and very convenient tool for the railway application.

- ▷ All components are **maintenance-free**.
- ▷ **Mechanic spring lock protection** to avoid unwanted opening of the jaws.
- ▷ **Light weight** yet high load capacity.
- ▷ All parts made of **cutting edge material HB400 steel**.

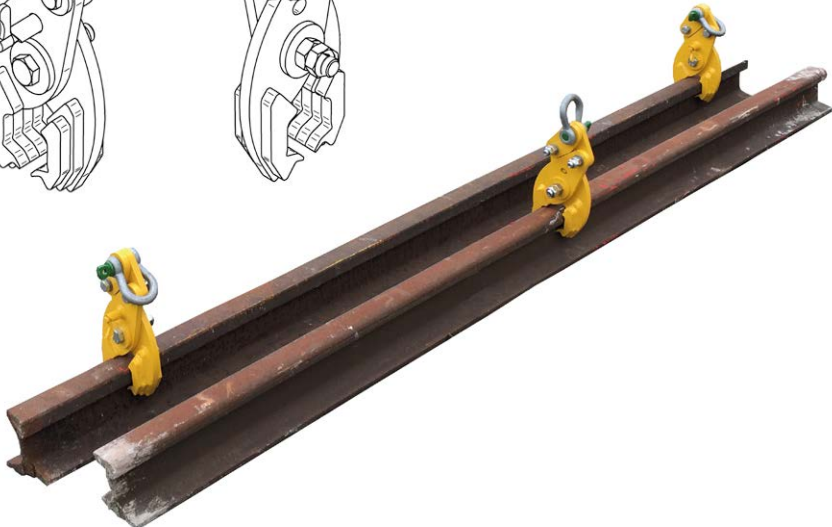
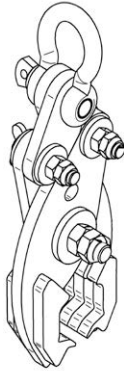
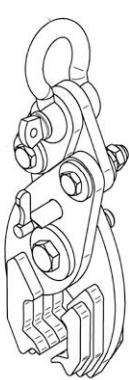


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Mechanic Rail Clamp RLD

Type	Load capacity (kg/lbs)	Weight (ca. kg/lbs)	Opening (mm/in)	Connection
RLD-25	2,500 / 5,500	12 / 26	40 / 1.6	eye

Package consists of: rail clamp



The mobile **KINSHOFER** rail cutter RC30 is a special development for the controlled demolition of rail systems and for the scrap preparation of railway lines.

All current Vignol rails (flat bottom rails) with a standard quality up to 900 N/mm² and a profile size „S7“ to „UIC 60“ can be cut. Vignol rails in special qualities exceeding 900 N/mm² or with head hardening are excluded. The wear of the cutters highly depends on the quality of the rails.

The mobile Rail Cutter RC 30 is ideal for excavators with an operating weight* of 22t - 35t / 48,400 - 77,000 lbs.



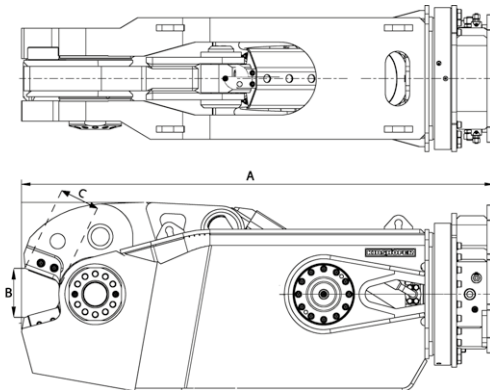
- ▷ Patented *DemaPower* cylinder.
- ▷ **Large heavy duty bearings** for reduced bushing wear.
- ▷ Housing made of extremely resistant special steel.
- ▷ Heavy duty **360° rotation**.
- ▷ Static S-version without rotation also available.

Mobile Rail Cutter RC30

Type	Weight (w/o adapter) (kg/lbs)	Length A (mm/in)	Jaw opening B (mm/in)	Jaw depth C (mm/in)	Heavy duty Rotation
RC30	2,650 / 5,830	2,335 / 91.9	225 / 8.9	190 / 7.5	360°

* decisive for the mounting of the shear is the payload of the excavator

Package consists of: mobile rail cutter



Requirements of Excavator

Operating pressure (open/close)	Operating pressure (rotate)	Back pressure	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 35 MPa (350 bar) / 5,040 psi	max. 14 MPa (140 bar) / 2,016 psi	0,5 MPa (5 bar) / 720 psi	150 - max. 250 l/min / 39.6 - max. 66 GPM	18 - max. 25 l/min / 4.8 - max. 6.6 GPM

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 COMBINATION 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.



Catalog: NOX Tiltrotators

Experience and innovation have led to one of the most advanced tools for excavators – the NOX: 360° endless 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 quick change system and various attachments this means highest efficiency at any construction site.

- ▷ **Precision and safety** due to „smooth“ proportional control.
- ▷ **High stability and long service life** thanks to special cast housing.
- ▷ **Low overall height** thanks to elliptic rotary actuator.
- ▷ **High and constant tilt force** due to cylinderless rotary actuator.
- ▷ **No protruding parts:** excavation with narrow bucket in small, deep canals, even under or in between existing tubes.
- ▷ **Low maintenance:** worm drive runs in permanent greasing - only few greasing points.



TR11NOX



Type	TR045NOX	TR07NOX	TR11NOX	TR14NOX	TR19NOX	TR25NOX
Operating weight	2.5 - 4.5t	4 - 7t	6 - 11t	10 - 14t	14 - 19t	19 - 25t
Weight* (from)	150 kg	200 kg	320 kg	485 kg	580 kg	860 kg
Width A* (from)	190 mm	205 mm	215 mm	240 mm	230 mm	260 mm
Length B* (from)	435 mm	460 mm	580 mm	610 mm	645 mm	845 mm
Height C* (from)	380 mm	420 mm	475 mm	565 mm	580 mm	650 mm
Recomm. bucket width max.	1,100 mm	1,100 mm	1,300 mm	1,600 mm	1,700 mm	2,000 mm
Breakout force max. (ISO)	40 kN	50 kN	75 kN	110 kN	150 kN	170 kN
Breakeout torque max.	29 kNm	40 kNm	79 kNm	145 kNm	200 kNm	250 kNm
Tilt angle	2 x 45°	2 x 50°	2 x 50°	2 x 50°	2 x 50°	2 x 50°
Tilt torque (constant)	6.5 kNm	11 kNm	16 kNm	31 kNm	40.5 kNm	51.7 kNm
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	3,800 Nm	4,700 Nm	7,500 Nm	11,000 Nm	12,000 Nm	15,000 Nm
Hydraulic pressure max.	21 MPa	25 MPa	27 MPa	30 MPa	30 MPa	30 MPa
Recomm. pump capacity CSP	30-80 l/min	30-80 l/min	40-100 l/min	80-160 l/min	100-180 l/min	120-200 l/min
Recomm. pump capacity DF04/06/10	15 / 32 l/min	15 / 32 l/min	21 / 40 l/min	40 / 45 l/min	60 / 50 l/min	70 / 70 l/min
Electric swivel	-	optional	optional	optional	optional	optional

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

Note: Highflow swivel (DF10 HF / CSP HF) and Powerline (CSP PL) available

Standard package: tiltrotator, electrical control system, upper bracket, lower quick coupler

Accessories

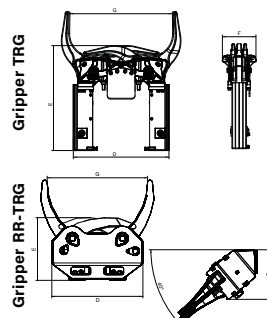
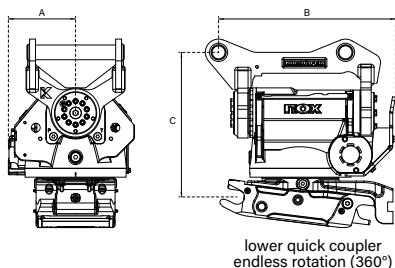
Hydraulic Gripper	Weight (ca. kg/lbs)	Dimensions D x E x F ¹⁾ (mm/in)	Opening max. G (mm/in)	Closing time ²⁾ (sec)	Closing force (kN/lbf)	Load capacity (kg/lbs)
TRG07	40 / 88	470 x 520 x 150 / 18.5 x 20.4 x 5.9	424 / 16.7	1.5 ²⁾	7.5 / 1,650	300 / 660
TRG11	80 / 176	600 x 660 x 210 / 23.6 x 25.9 x 8.2	644 / 25.3	1.5 ²⁾	10 / 2,200	500 / 1,100
TRG19	113 / 249	700 x 715 x 265 / 27.6 x 28.2 x 10.4	734 / 28.9	3.0 ²⁾	18.5 / 4,070	900 / 1,980
TRG25	195 / 429	895 x 760 x 295 / 35.2 x 29.9 x 11.6	1100 / 15.6	2.0 ²⁾	19.5 / 4,290	1,400 / 3,080
RR-TRG	170 / 154	745 x 480 x 395 / 29.3 x 18.9 x 15.6	822 / 32.4	3.9 ³⁾	30.1 / 6,622	5,000 / 11,000

The RR-TRG gripper is only available for TR19NOX and TR25NOX

¹⁾ see technical drawing ²⁾ @ 25 l/min / 6.5 GPM ³⁾ @ 30 l/min / 8 GPM

Technical Drawings

Tiltrotator TR11NOX S45



The NOXProp+ control system provides more safety and precision. NOX Tiltrotator, quick coupler and attached tools are controlled effectively and conveniently with ergonomic joysticks by the smart NOXProp+. Easily retrofittable for each excavator. Features are the individual function setting and the easy menu navigation thanks to the corresponding touchscreen. Integrated GPS, LTE, Bluetooth and WiFi link your machine with the digital workplace. In combination with our SmartTag, the connection with the fleet management is realized for maximum integration and effectivity.

Key features NOXProp+:

- ▶ Optimal NOX performance thanks to perfectly adjusted control
- ▶ Autocalibration and Position indicator at the display.
- ▶ 4 different user profiles with up to 10 tool profiles (more flexibility)
- ▶ Integration with 2D/3D excavation system - NOXGeo
- ▶ Easy installation, Connectivity (WiFi, LTE, GPS, Bluetooth) and remote maintenance.
- ▶ SmartTag- interface to fleet management



NOXProp+

Request? nox@kinshofer.com

Summary of machine requirements

CSP - NOXProp+	DF04 - Lines	DF06 - Lines	DF10 - Lines
Hammer/shear circuit	2 x proportional double-acting circuits	2 x proportional double-acting circuits (tilt and rotation)	2 x proportional double-acting circuits (tilt and rotation)
Additional high pressure circuit (Powerline) for Tiltrotator with CSP PL (NOXProp+)		1 x hydraulic quick coupler circuit	1 x hydraulic quick coupler circuit
			1 x double-acting high pressure circuit (compactor)
			1 x double-acting low pressure circuit (gripper)

Overview of the different functions of the 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	✓	—	—	—
Remote maintenance	✓	—	—	—
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 (HF)	●	—	—	●
Quick coupler safety sensors	●	—	—	—
Quick coupler control	✓	—	—	—
Driving/steering function	●	—	—	—
Fleet management	●	●	●	●
Machine assistance systems	●	—	—	—

✓ Standard ● Optional

Mounting Options for Attachments

KM 501 – Upper Suspension without Pendulum Damper

Specify excavator type when ordering.

Type	For recomm. operating weight (t/lbs)	For rotators (type)	Upper connection rotator (width x pin-Ø) (mm/in)
KM 501 1t-8t	1 - 8 / 2,200 - 17,600	KM 04 F / KM 04 F140-30V / KM 04 F140-30US	84 x 30 / 3.3 x 1.18
KM 501 6t-12t	6 - 12 / 13,200 - 26,400	KM 06 F140-40 / KM 07 F180-40	84 x 40 / 3.3 x 1.57
KM 501 9t-12t	9 - 12 / 19,800 - 26,400	KM 10 F275-50	110 x 50 / 4.3 x 1.97
KM 501 13t-25t	13 - 25 / 28,600 - 55,000	KM 10 F275-60	125 x 60 / 4.9 x 2.36



KM 511 – Upper Suspension with Pendulum Damper

Specify excavator type when ordering.

Type	For recomm. operating weight (t/lbs)	For rotators (type)	Upper connection rotator (width x pin-Ø) (mm/in)
KM 511 1t-8t	1 - 8 / 2,200 - 17,600	KM 04 F / KM 04 F140-30V / KM 04 F140-30US	84 x 30 / 3.3 x 1.18
KM 511 6t-12t	6 - 12 / 13,200 - 26,400	KM 06 F140-40 / KM 07 F180-40	84 x 40 / 3.3 x 1.57
KM 511 9t-12t	9 - 12 / 19,800 - 26,400	KM 10 F275-50	110 x 50 / 4.3 x 1.97
KM 511 13t-25t	13 - 25 / 28,600 - 55,000	KM 10 F275-60	125 x 60 / 4.9 x 2.36



T630 cardanic – Upper Suspension with Pendulum Damper incl. Adapter Atlas

Type	Operating weight (t/lbs)
T630 cardanic	13 - 25 / 28,600 - 55,000



KM 690 – Adapter for Rigid Mount

Type	Operating weight (t/lbs)
KM 690 8t	up to 8 / 17,600
KM 690 15t	up to 15 / 33,000
KM 690 20t	up to 20 / 44,000
KM 690 27t	up to 27 / 59,400



T650 rigid – Adapter for Rigid Mount for Atlas Quick Coupler T620

Type	Operating weight (t/lbs)
T650 rigid	13 - 25 / 28,600 - 55,000



Note: adapters for quick change systems for other manufacturers or other sizes on request

Mounting Options for Attachments

SW33 / SW48 - Upper Suspension with Pendulum Damper incl. Adapter Liebherr



Type	Operating weight (t/lbs)
SW33 cardanic	8 - 22 / 17,600 - 48,400
SW33 Likufix cardanic*	8 - 22 / 17,600 - 48,400
SW48 cardanic	15 - 28 / 33,000 - 61,600
SW48 Likufix cardanic*	15 - 28 / 33,000 - 61,600

* incl. hoses

CW20 / CW30 / CW40 - Upper Suspension with Pendulum Damper incl. Adapter Verachtert



Type	Operating weight (t/lbs)
CW20 cardanic	7.5 - 16 / 16,500 - 35,200
CW30 cardanic	14 - 21 / 30,800 - 46,200
CW40 cardanic	19 - 27 / 41,800 - 59,400

OQ65 / OQ70/55 - Upper Suspension with Pendulum Damper incl. Adapter Oilquick



Type	Operating weight (t/lbs)
OQ65 cardanic	14 - 22 / 30,800 - 48,400
OQ70/55 cardanic	18 - 32 / 39,600 - 70,400

SW33 / SW48 - Adapter for Rigid Mount for Liebherr



Type	Operating weight (t/lbs)
SW33 rigid	8 - 22 / 17,600 - 48,400
SW33 Likufix rigid*	8 - 22 / 17,600 - 48,400
SW33-9 Likufix rigid*	8 - 22 / 17,600 - 48,400
SW48 rigid	15 - 28 / 33,000 - 61,600
SW48 Likufix rigid*	15 - 28 / 33,000 - 61,600

Signal contacts (14 poles)

e.g. for machine controls (SWA33) and switchable valves - preparation must be ready on Likufix block and SWA

* incl. hoses

CW20 / CW30 / CW40 - Adapter for Rigid Mount for Verachtert



Type	Operating weight (t/lbs)
CW20 rigid	7.5 - 16 / 16,500 - 35,200
CW30 rigid	14 - 21 / 30,800 - 46,200
CW40 rigid	19 - 27 / 41,800 - 59,400

OQ65 / OQRail / OQ70/55 - Adapter for Rigid Mount for Oilquick



Type	Operating weight (t/lbs)
OQ65/4 rigid	14 - 22 / 30,800 - 48,400
OQRail rigid	14 - 22 / 30,800 - 48,400
OQ70/55/4 rigid	18 - 32 / 39,600 - 70,400

Note: adapters for quick change systems for other manufacturers or other sizes on request

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ATTACHMENTS FOR CRANES

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The rail grapple KM 632HPX Rail with its *HPXdrive* is used for the loading and unloading of rails, but also, with care, handle single sleepers. A non-return valve secures constant pressure even in case of unexpected pressure drop. The revolutionary *HPXdrive* technology guarantees a reliable and virtually maintenance free attachment. The gripper is ideal for mobile loader cranes as well as for rigidly mounted loader cranes on maintenance trailers.

- ▷ **Reliability** of the HPXdrive! The movement of the arms of the grapple is generated by two hollow shafts, which run opposed and have a helix thread, hydraulically driven by a single piston. No more hydraulic cylinder.
- ▷ **Longer life cycle** up to 50%! **Self-lubrication:** The drive unit runs in a permanent oil bath. The compact design makes the HPXdrive resistant to dirt and debris.
- ▷ **Versatility** with different types of shells that can easily be refitted onto the driving unit.
- ▷ **Profitability** through low maintenance costs and longer life cycle.
- ▷ **Rotator with shaft** KM 04 S is available as an alternative, in case a quick change KM 505 (or a reduction piece KM 502 e.g. for a non-rotating hook) is required.
- ▷ **Constant closing force** (34 kN / 7,480 lbf at 26 MPa / 3,770 psi operating pressure) during the entire opening and closing process.



Rail Grapple KM 632HPX Rail with **KINSHOFER** Rotator

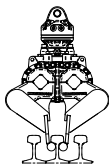
Type	Length (mm/in)	Width (mm/in)	Height (mm/in)	Weight (kg/lbs)	Closing force (kn/lbf @ 26 MPa / 3744 psi)	Load capacity (kg/lbs)
KM 632HPX Rail	1,000 / 39.4	560 / 22.1	740 / 29.1	265 / 583	34 / 7,480	2,000 / 4,400

Package consists of: rail grapple, KINSHOFER rotator KM 04 F140-30V, upper suspension KM 501 4500, non-return valve

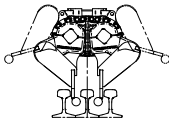
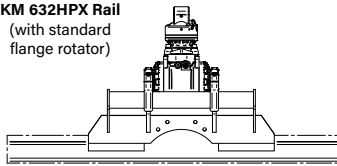
Please note: the KM 632HPX Rail is also available with a KINSHOFER shaft rotator and quick change system KM 505

Accessoires

Type	Description
KM 04 S	KINSHOFER shaft rotator for precise positioning of the load – up to 4,500 kg / 9,900 lbs load capacity
KM 04 S68-30US	recommended KINSHOFER shaft rotator for heavy duty tasks – up to 4,500 kg / 9,900 lbs load capacity
KM 505	quick change system for shaft-type rotator KM 04 S
KM 505 HD	quick change system HD for shaft-type rotator KM 04 S68-30US
KM 502 (4500)	reduction link between rotator and grapple
KM 204 01	mobile part of hydraulic quick coupling for hose (Ø 10 mm / 0.39 in, 2 pieces)
KM 204 03	hydraulic quick change kit incl. mobile and fixed parts (2 pieces each) mounted with adapters to rotator



KM 632HPX Rail
(with standard flange rotator)



KM 632HPX Rail
with concrete sleeper
(here with optional shaft rotator and reduction link)



Typ: UIC 54E

Typ: UIC 54

Typ: 60E1

Requirements of Loader Crane

Operating pressure
26 MPa (260 bar) / 3,770 psi

Recommended oil flow
25 - max. 75 l/min / 6.61 - max 19.82 GPM



Designed to handle the various demands of the rail, the universal railroad Grapple with vertical cylinders KM 632Rc can be used for rails and railroad ties / sleepers - and even for clearing brush.

- ▷ The Universal Railroad Grapple is **ideal for handling used sleepers or rails - single or bundled**.
- ▷ **Long service life** is ensured by the sturdy construction and high quality components.
- ▷ **Reduced wear** resulting from generously dimensioned bearing system.
- ▷ **Tine tips are vertical when the grapple is fully opened**, allowing easy loading and unloading of bundled ties - directly from gondola cars.
- ▷ **Exchangeable gears are standard** and ensure synchronized movement of tines.
- ▷ **Each arm is equipped with a heavy duty hydraulic cylinder**, providing an extremely high clamping force.
- ▷ The **gear-type continuous rotator** allows precise positioning of the grapple.
- ▷ **Safety**: a special holding valve provides a safe grip - even if pressure drops.



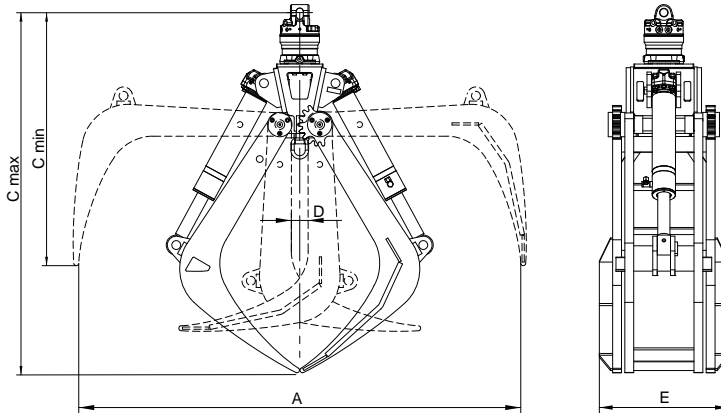
Universal Railroad Grapple KM 632Rc

Type	Capacity (m ² /cords)	Width E (mm/in)	Opening A max. (mm/in)	Height C max. (mm/in)	Height C min. (mm/in)	Gripping range D min. (mm/in)	Self weight (kg/lbs)	Load capacity (kg/lbs)	Closing force (kN/lbf)
KM 632R-0.25 c	0.35 /	600 /	1,750 /	1,370 /	1,070 /	76 / 3.0	440 /	3,000 /	22.5 /
	0.25	23.6	68.9	53.9	42.1		968	6,600	4,950
KM 632R-0.33 c	0.50 /	600 /	1,980 /	1,500 /	1,195 /	76 / 3.0	465 /	3,000 /	19.4 /
	0.33	23.6	78.0	59.1	47.1		1,023	6,600	4,268
KM 632R-0.50 c	0.75 /	600 /	2,440 /	1,700 /	1,270 /	76 / 3.0	600 /	3,000 /	15.3 /
	0.50	23.6	88.2	66.9	50.0		1,320	6,600	3,366

Package consists of: universal railroad grapple, KINSHOFER rotator KM 04 F140-30US, short connecting hoses, upper suspension KM 501 4500, non-return valve, central lifting eye

Accessories

Type	Description
KM 505 HD	heavy duty quick change system set for shaft rotators, incl. hydraulic couplings
KM 685 06 eye / hook set 2	welded eyes / welded hooks (2 pieces)



Requirements of Loader Crane

Operating pressure (open/close)	Operating pressure (rotate)	Recommended oil flow (open/close)	Recommended oil flow (rotate)
max. 26 MPa (260 bar) / 3,770 psi	max. 32 MPa (320 bar) / 4,610 psi	25 - max. 75 l/min / 6.61 - max 19.82 GPM	15 - max. 50 l/min / 3.96 - max. 13.21 GPM

3-Axes-Manipulator

KM 931 

The 3-axes-manipulator KM 931 features maximum maneuverability of your attachments at the loader crane's tip – and provides flexibility of the loader crane's use in any arc position. For mobile and fix mounted loader cranes.

- ▷ **3-axes-manipulator: maneuverability** by three hydraulic functions – gripping, rotating and tilting (3rd hydraulic circuit needed).
- ▷ **Endless rotation.**
- ▷ **High loads** of 1,000 kg / 2,200 lbs are handled by KINSHOFER-manipulators.
- ▷ **Precise positioning** by the self-locking worm drive.
- ▷ **Oil feedthrough with 5 lines** for mulchers with flap.



Request? scs@kinshofer.com

3-Axes-Manipulator KM 931

Type	Load capacity max. (kg/lbs)	Slewing angle	Tilting angle	Rotation	Weight (kg/lbs)
KM 931-1000	1,000 / 2,200	130°	± 40°	360° endless	290 / 638

Package consists of: manipulator, KINSHOFER worm drive, non-return valve

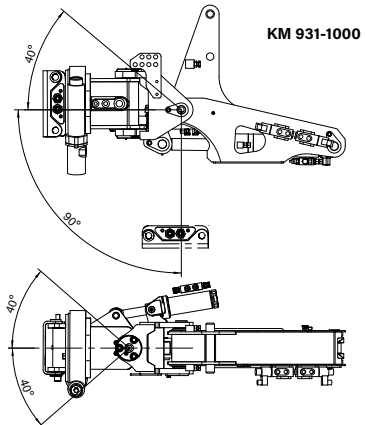
Note: tubes or poles must always be taken at / near their balance point!

Accessories

Type	Description
KM 980-2 c	solenoid valve KM 980-2 complete attachment kit including assembly components, hose guard, hoses and mounting – 12 V/24 V, operating pressure max. 25 Mpa / 3,600 psi, oil flow 60 l/min / 15.9 GPM. For extension to the third hydraulic control circuit, to switch when there are only two free hydraulic circuits on the loader crane available for the three required functions (rotate, clamp and tilt)



KM 931 mounted to a crane arm on a maintenance wagon (here with a mulcher)



Requirements of Loader Crane

Three hydraulic circuits needed



Operating pressure
max. 20 MPa (200 bar) / 2,880 psi

Recommended oil flow

20 - max. 40 l/min / 5.28 - max. 10.57 GPM



Upper Suspensions and Accessories for Rotators

KM 501 – Upper Suspension between Rotator and Crane

An upper suspension is a cardan link between rotator and crane. It is available for all current makes and models of cranes. Please specify dimensions when ordering.

Type	Load capacity (kg/lbs)	Self weight (approx. kg/lbs)
KM 501 (3000)	up to 3,000 / 6,600	5 / 11
KM 501 (4500)	up to 4,500 / 9,900	10 / 22
KM 501 (6000)	up to 6,000 / 13,200	15 / 33
KM 501 (10000)	up to 10,000 / 22,000	25 / 55



KM 501



KM 501

KM 511 –Upper Suspension with Pendulum Damper between Rotator and Crane

A pendulum damper reduces the horizontal swing of the attachment. It can also be retrofitted to an existing upper suspension.

Type	Load capacity (kg/lbs)	Self weight (approx. kg/lbs)
KM 511 (4500)	up to 4,500 / 9,900	15 / 33
KM 511 (6000)	up to 6,000 / 13,200	20 / 44
KM 511 (10000)	up to 10,000 / 22,000	30 / 66



KM 511

KM 206 – Hose Guard

The hose guard is a metal bow to be attached onto the rotator. It is designed to protect the hoses of the rotator from damage i.e. from protruding branches.

Type	Self weight (approx. kg/lbs)
KM 206 hose guard for the rotator	3 / 6.6



KM 206

KM 502 – Reduction Link between Rotator and Grapple

A reduction link adapts a shaft type rotator to an attachment with a standard hole pattern for a flange (KM 502).

Type	Load capacity (kg/lbs)	Self weight (approx. kg/lbs)
KM 502 (3000)	up to 3,000 / 6,600	2 / 4.4
KM 502 (4500)	up to 4,500 / 9,900	3 / 6.6
KM 502 (6000)	up to 6,000 / 13,200	4 / 8.8



KM 502

KM 460 – Accessories for Attaching Pallet Forks with Shaft Rotator

Type	Description	Motor-Type	Self weight (approx. kg/lbs)
KM 460 03 KM 03 S	rigid suspension link with pin for all KINSHOFER shaft-type rotators	KM 03	8 / 18
KM 460 03 KM 04 S		KM 04	10 / 22
KM 460 08 KM 03 S	rigid hook for all KINSHOFER shaft rotators	KM 03	8 / 18
KM 460 08 KM 04 S		KM 04	9 / 20
KM 460 04 KM 04 S	non-rotating swinging hook for all KINSHOFER shaft rotators	KM 04	12 / 26
KM 460 04 KM 06 S		KM 06	15 / 33
KM 460 10	non-rotating swinging hook for all KINSHOFER flange rotators	KM 10 F173	25 / 55



KM 460 03



KM 460 08



KM 460 04



KM 460 10

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