

TYPE AMM

Lawn sweeper



Art. No.: 10040221

Sep 20, 2011 | Version 1.8 | EN

Kugelmann Maschinenbau e.K.
Gewerbepark 1-5
87675 Rettenbach a.A.
GERMANY

www.kugelmann.com
office@kugelmann.com
+49 (0) 8860 /
9190-0

* Kugelmann Maschinenbau is a family-run Allgäu business with its main emphasis and tradition in municipal technology. With passion, we manufacture reliable and pioneering machines - we love what we do.

Table of contents

Warranty card	7
Designation of symbols	9
Danger warnings	10
Safety instructions.....	10
Mounted equipment	11
PTO operation	12
Maintenance.....	14
Specific	15
Danger area of machine	16
Shut-off valve	16
Designated use.....	17
Improper use of AMM	17
General information	18
Danger signs and information signs of AMM	19
Fitting and removal of AMM	24
Fitting of AMM	24
Removal of AMM	26
Description of control system	27
Operating elements	27

Push-buttons: Opening of container	28
Push-buttons: Move container upwards	28
Push-buttons: Pick-Up	29
Settings of buttons during individual actions	30
Move container upwards	30
Opening of container	31
Closing of container	31
Moving container downwards	32
Wear parts	33
Elimination of errors	33
Working equipment.....	34
Basic setting of AMM.....	34
Sweeping Pick-Up	35
Scarifier Pick-Up	35
Mowing Pick-Up.....	35
Replacing working equipment.....	36
Removal of used Pick-Up	36
Fitting of new Pick-Up.....	38
Maintenance work	40
After each use	40
After the first 5 operating hours.....	40
Monthly	40
Yearly	41
.....	41
Retightening chain on rh side, seen in direction of travel.....	42

Retightening chain on lh side, seen in direction of travel43

Driving on public roads.....44

Weights of cuttings45

Technical prerequisites for carrier vehicle45

Data sheet with contour drawing46

Drawbar loads for AMM with high-dump system47

Warranty:

Kugelmann Maschinenbau e.K., 87675 Rettenbach a.A., warrants its machines to be free from defects in material and workmanship and undertakes to replace free of charge all parts ex works which have been purchased from relevant Kugelmann dealers and have been acknowledged as defective after having been checked by Kugelmann. The warranty expressly given shall be limited to a period of 12 months from the date of delivery of the machine to purchaser. All further claims by the customer shall be excluded.

All wear parts are excluded from warranty.

The manufacturer takes no responsibility for third-party products not produced at the works of Kugelmann. However, we assign our claims against the supplier to the customer. No warranty will be given for machines purchased second-hand or used and modified or converted machines.



Important: Please make sure that you fill in your warranty card and send it back to the manufacturer immediately. Claims have to be notified with a warranty claim in writing after their occurrence without undue delay (after 30 days at the latest).



Warranty card

Kugelmann Maschinenbau e.K.
Gewerbepark 1-3
87675 Rettenbach a. Auerberg
Germany

Device type:
Serial number:
Vehicle identification number:
.....
Year of construction:
Address of dealer:
.....
.....
.....
Address of user/owner:
.....
.....
.....

I have read the operating instructions.

Signature of user:.....

The warranty card has to be sent directly to the manufacturer.

ATTENTION: Warranty claims are only accepted with the warranty card of Kugelmann Maschinenbau e.K.

Designation of symbols

Apart from the notes in these operation instructions, also observe the general regulations regarding safety and accident prevention!

All personnel driving the towing vehicle must be familiar with the hints in these operating instructions.



Safety symbol:
Danger! Imminent danger to life and health!



ATTENTION
Warning! Possible danger to life and health!



Information
Useful information with respect to proper handling of the machine!



Tip
Suggestions for reduced workload!

Danger warnings

Safety instructions



Prior to commissioning, read and observe the operating instructions and safety hints!



Kugelmann multi-functional towing machines - abbreviated AMM - may only be used, maintained and repaired by persons who are familiar with it and have been informed about the dangers.



Observe the generally recognized rules relating to technical safety requirements and occupational health as well as the rules in road traffic.



Unauthorized alterations to the machine exclude any liability of the manufacturer for any damages arising from such action.



Observe the generally applicable safety regulations.



The fitted warning and indicator plates give important hints for a safe operation. Observe these for your own safety!



Before starting work, familiarize yourself with all devices and actuating elements as well as with their function.



Never work in the vicinity of the machine in loose clothing. It can get caught in moving parts.



Before moving and commissioning, check the vicinity of the machine (children, passers-by). Ensure sufficient visibility!



Make sure that all protective devices are installed when operating the machine!



Use utmost caution when coupling and uncoupling the unit to or from the towing vehicle. Ensure the right height of the drawbar, the drawbar eye must be unloaded.



Do not enter the danger zone of the machine! Do not stand between machine and towing vehicle.



Danger of contusions and cuts at moving parts (e.g. high-dumping mechanism)!



Observe admissible axle loads and total weights!

Fitted units



Before attaching and removing the machine to/from the towing device, set the control device to the position in which unintentional lifting and lowering is impossible.



When driving on the road with the pick-up raised, the operating lever must be secured against lowering. Close shut-off valve.



The machine may only be uncoupled when it is closed and folded.



Insert supports when working on container lifted upwards. Close shut-off valve with opened container.



Never activate "Moving container upwards" in a hillside situation.



Do not open the container under high voltage lines or move it upwards! Danger of voltage flashover!



There is a danger of crushing and shearing points in the hydraulic and mechanical areas!

PTO operation



Only the drive shafts specified by the manufacturer may be used!



Mounting and dismounting the PTO shaft only when the PTO drive is switched off, the engine is switched off and the ignition key is removed!



Always ensure that the drive shaft is correctly mounted and secured!



Secure the drive shaft guard by hooking in the chain to prevent it from running along!



Before switching on the PTO shaft, make sure that the selected speed and direction of rotation of the PTO shaft of the towing vehicle match the permissible speed and direction of rotation of the AMM!



Before switching on the PTO shaft, make sure that nobody is in the danger zone of the machine!



Never switch on the PTO shaft with the engine switched off!



When working with the PTO shaft, no one may be in the area of the rotating PTO shaft or drive shaft.



Always switch off the power take-off shaft if excessive angular deflections occur, e.g. when reversing, tight cornering.



Attention, after switching off the PTO shaft there is danger due to machine parts that continue running! Do not approach the machine too closely during this time! Only work on the machine when it has come to a complete standstill!



Clean, lubricate or adjust the PTO-driven machine or the drive shaft only when the PTO shaft and the engine is switched off and the ignition key is removed!

Maintenance



Repair, maintenance and cleaning work as well as the removal of malfunctions may only be carried out with the drive switched off and the motor at standstill! Remove the ignition key!



Repairs to preloaded energy accumulators (springs, etc.) require sufficient knowledge and assembly tools in accordance with regulations and may only be carried out in specialist workshops!



Check nuts and screws regularly for tightness and retighten them, if necessary!



When performing maintenance work on the lifted device, insert the support and close the hydraulic shut-off valve!



Dispose of oils, greases and filters properly!



Spare parts must at least meet the technical requirements specified by the device manufacturer! For example, original spare parts fulfill these requirements!



When performing electrical welding work on the towing vehicle and attached equipment, disconnect the control unit cable!

Specific



For repair, maintenance and cleaning work as well as the elimination of malfunctions, insert the mechanical safety support when the container is lifted. Close shut-off valve.



Close the shut-off valve when carrying out repair, maintenance and cleaning work and when eliminating malfunctions in the open container.



The AMM may only be unhitched from the towing vehicle when it is empty and folded up (danger of tipping!).



When unhitching the machine from the towing vehicle, the wheel chocks must be pushed under the wheels.



Hydraulic lines must be replaced every 6 years!



Do not raise or empty the container under overhead lines (telephone, power supply, etc.). Danger of voltage flashover!



Only raise or empty the container on level ground. Never drive the container up a slope, otherwise there is a risk of tipping over.



Do not move the machine with the container lifted up. There is a risk of tipping due to the raised center of gravity!



Danger area of machine

Shut-off valve

Always close the shut-off valve before disconnecting the AMM from the towing vehicle.



Always close the shut-off valve when working on the open or raised container. Insert the mechanical safety support for your own safety.



There is a wide danger zone around the AMM. Danger through flying stones, clods of earth, etc. with pick-up switched on. Always keep the rear windows of the towing vehicle closed during work.



The danger zone is considered to be the immediate vicinity of the AMM during closing, raising and lowering of the container. Moving parts cause crushing and shearing points.

Designated use

The machine AMM in all design variants is used for sweeping and picking up leaves and grass. With the appropriate equipment, it serves for scarifying and flail mowing.



Any other performance of work shall be deemed to be contrary to the purpose. No guarantees are assumed for this.

Improper use of AMM



The AMM may only be operated at the specified nominal speed. An AMM with 540 rpm nominal speed must never be operated at 1000 rpm. The correct speed is indicated on the drive tube cover next to the bevel gear.



Do not operate an AMM with a nominal speed of 1000 rpm at 540 rpm, otherwise no sweeping performance will be achieved.



General information

Sound emission

The operation of the attached AMM is not expected to increase the sound pressure level at the operator's ear or increase the whole-body vibrations.

Driving on sloping terrain

When working on sloping terrain, always drive up and down the slope. Never drive across the slope, otherwise there is a risk of tipping.

Workplace of the operating personnel

The AMM is operated from the towing vehicle. When working with one of the various working equipments, the operator is located exclusively in the operator's cab. The rear window in the direction of the AMM is closed in all cases. If the operator leaves the operator's cabin, the PTO drive must always be switched off first.

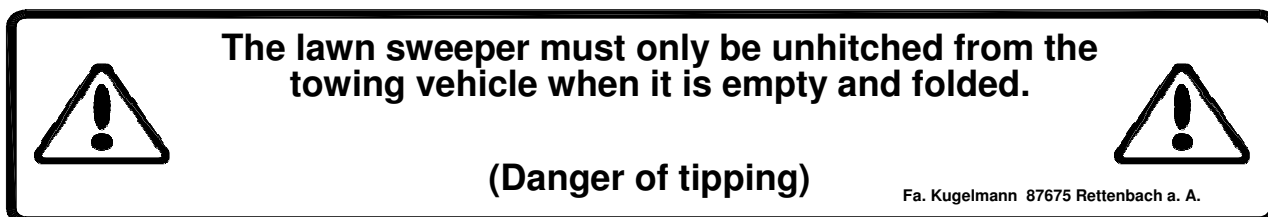
Danger signs and information signs of the AMM

Support load 320

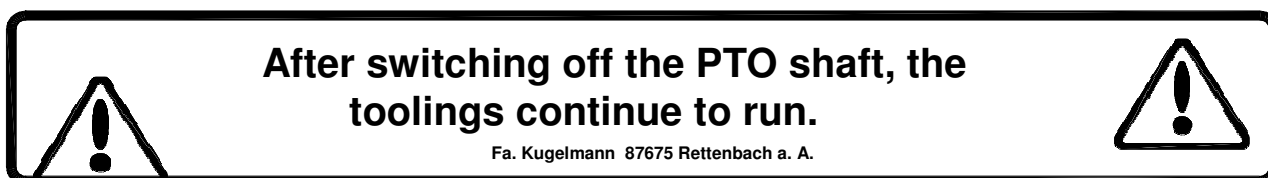
Specifies the maximum drawbar load for an unbraked AMM. Indicated on the drawbar near the towing eye.

Support load 250

Specifies the maximum drawbar load for an unbraked AMM. Indicated on the drawbar near the towing eye.



Position on the drawbar when mounting the mechanical support wheel.



Position is on the working equipment pick-up. Due to the sometimes quite large driven masses, the tools do not come to a sudden stop.

540 1/min

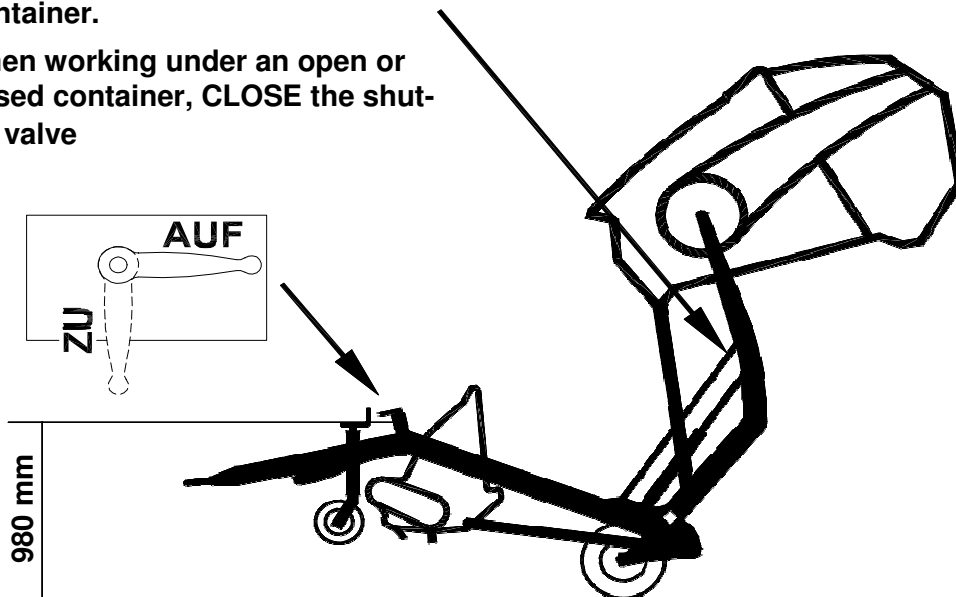
or

1000 1/min

Indicated on the drive tube cover of the pick-up. The AMM must be operated at this speed.



- Do not enter the danger zone of the machine!
- Prior to commissioning, read and observe operating and safety instructions!
- After switching off the PTO shaft, the toolings continue to run.
- The lawn sweeper must only be unhitched from the towing vehicle when it is empty and folded (danger of tipping)
- Retighten the sweep bars every 10 operating hours (torque 10 Nm).
- INSERT SUPPORT when working under a raised container.
- When working under an open or raised container, CLOSE the shut-off valve



Position directly behind the hydraulic control block



Position on the left side, as seen in the direction of travel, on the support to be inserted. In addition, close the shut-off valve on the control block.



Position on both sides at the pivot point of the container.



Danger through flying stones, clods of earth, etc. with working equipment switched on. Always keep windows of the towing vehicle that can be opened closed during work.



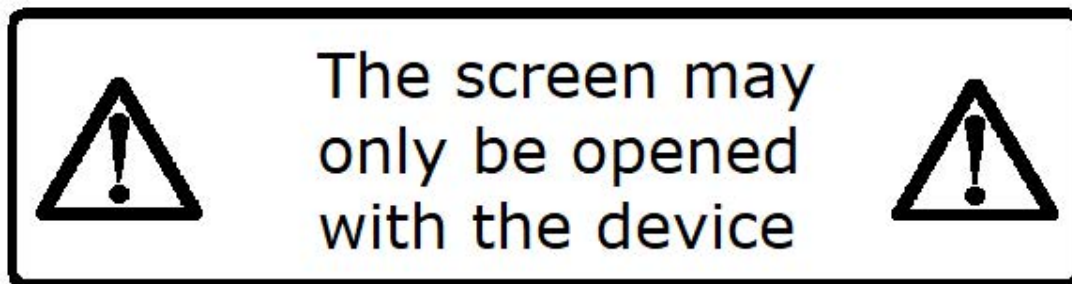
The danger zone is considered to be the immediate vicinity of the AMM during closing, raising and lowering of the container. Moving parts cause crushing and shearing points.



Position on both sides of the wheels. Indicate the tire pressure of the tires.



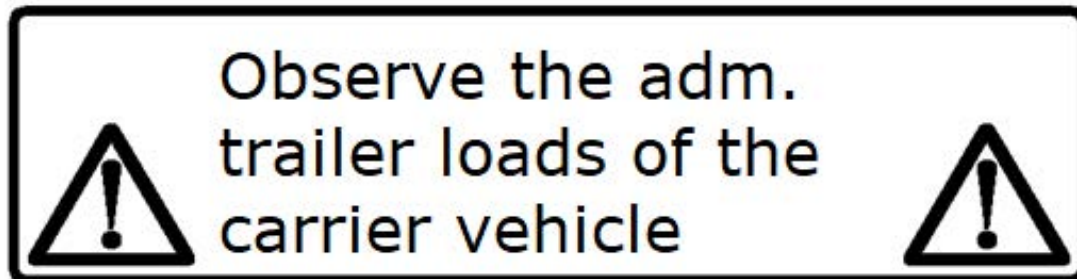
Indicates the direction of rotation of the drive shaft. Position on the drive shaft protection.



Position on both sides of the container below the disc handles



Danger through flying stones, clods of earth, etc. with working equipment switched on. Always keep the window closed.



Position on the drawbar

Fitting and removal of AMM

Fitting of AMM



The PTO of the towing vehicle must supply the PTO speed specified on the AMM. 540 U/min or 1000 U/min. The correct PTO speed is indicated on the drive tube cover next to the bevel gear of the AMM.



The AMM may only be operated at the specified nominal speed.

Set the drawbar eye of the drawbar to the appropriate height of the towing vehicle. The height is adjusted via the crank of the support wheel.

Hitch the towing vehicle to the towing eye of the AMM.



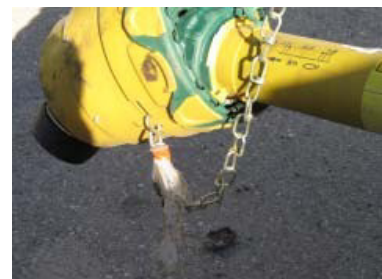
No persons may be between the towing vehicle and the AMM while the towing vehicle is moved backwards.

Insert the hitching bolt and secure it against falling out.

Couple the PTO shaft to the PTO drive of the towing vehicle, the locking element must engage perceptibly.

Attach the chain for the anti-rotation device to the vehicle. Plug in the hydraulic connection.

Plug in control cable.



Plug in lighting plug. Perform function test for lights, turn signals, brake lights, tail lights and front marker lights.

Remove the wheel chocks from the wheels, insert them in the holders provided and secure them against falling out.

For AMM with overrun brake, release the parking brake and attach the arresting cable to the towing vehicle. Crank the support wheel all the way up.

Open shut-off valve at hydraulic block of AMM.



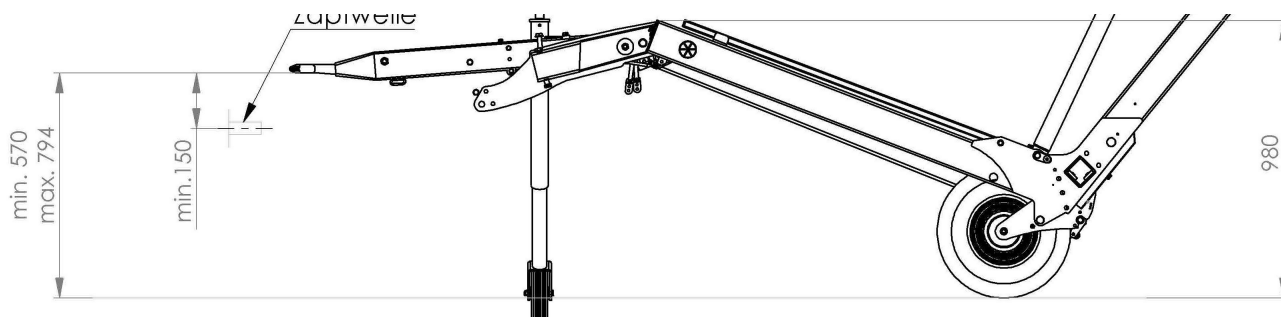
The drawbar must be adjusted in inclination so that the distance from the top edge of the square cross tube to the floor is 980mm. The AMM must be placed on a flat surface.



Low-dump system

high-dump system

Limit dimensions and tolerances for mounting:



Removal of AMM

Before removing the AMM: Empty container. Close container. Lower container.

Close shut-off valve at hydraulic block of AMM. Depressurize the hydraulic line via the floating position of the hydraulic system in the towing vehicle.



The AMM may only be unhitched from the towing vehicle when it is empty and folded up. TIPPING DANGER!



Switch off PTO shaft. Switch off motor. Remove the ignition key!



After switching off the PTO shaft, the toolings continue to run.

Choose a level place to park the AMM.

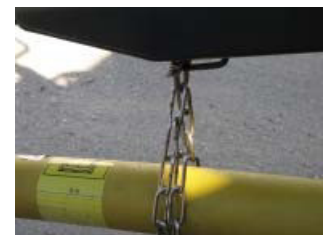
Place the wheel chocks in front of and behind a wheel to protect the AMM against rolling away. For AMM with brake, tighten handbrake lever, unhook brake catch cable.

Extend the jockey wheel to the ground. The towing eyelet must be unloaded. Disconnect the illumination plug and place it safely on the AMM to protect it from contamination.

Unplug the control cable from the control unit and place it safely on the AMM to protect it from contamination. Remove the control unit from the towing vehicle and store it in a dry place until the next use. Unplug the hydraulic line and place it safely on the AMM to protect it from contamination.

Disconnect the drive shaft at the towing vehicle and attach it to the drawbar using the retaining chain.

Unhook the towing eye of the AMM and drive away carefully with the towing vehicle.



Description of control system

Operating elements

The control unit of the AMM has 3 push-buttons with adjacent indicator lamps. "Open container", "Raise container" and "Pick-up".



Any action on the AMM can only be triggered in conjunction with the control unit and the operating lever of the hydraulics in the towing vehicle.



If the red indicator lamps next to the "Open container" and "Lift container" buttons flash alternately, the drive shaft monitoring sensor is not connected or is defective.

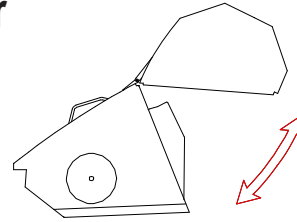


After installing a pick-up, the plug for the drive shaft monitoring must be plugged in again.



Starting from version 3 of the control, all 3 indicator lamps next to the push-buttons flash together after the supply voltage is switched on. The number of blink pulses indicates the version number. During this time, no further actions are performed by the controller and no keystrokes are evaluated.

Push-buttons: Opening of container



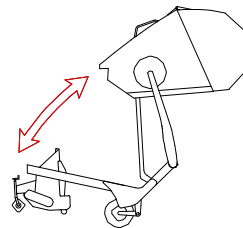
Do not open the container under open-air lines. Danger from electric shock!

If this button is kept pressed, the container can be opened or closed using the vehicle's hydraulic controls.



As long as the drive shaft is rotating, the container cannot be opened. If the button is pressed when the drive shaft is switched on, the indicator lamp next to the button flashes.

Push-buttons: Lift container



Do not raise the tank under overhead lines. Danger from electric shock!



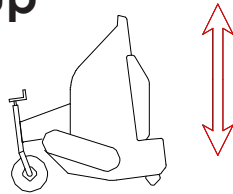
Do not move the AMM with the hopper raised; there is a considerable risk of tipping due to the elevated center of gravity.

If this button is kept pressed, the container can be raised or lowered using the vehicle's hydraulic controls.



As long as the drive shaft is rotating, the container cannot be lifted. If the button is pressed when the drive shaft is switched on, the indicator lamp next to the button flashes.

Push-buttons: Pick-Up



This push-button switch is used to switch the hydraulic function to pick-up operation. The function is switched on by pressing a button, and the yellow indicator lamp next to the button lights up. Pressing the key again switches the function off and the indicator lamp goes out.

Lift out pick-up

The yellow control lamp next to the yellow button must light up. Press the button once if necessary. Apply pressure to the line via the operating lever of the hydraulics in the towing vehicle. The pick-up is lifted by a single-acting hydraulic cylinder.

Pick-up in working position

The yellow control lamp next to the button must light up. Press the button once if necessary. Move the control lever of the hydraulics in the towing vehicle to floating position. Lock the operating lever in floating position, the pick-up is lowered.



When driving on public roads, the pick-up must be lifted to the upper stop and the shut-off valve must be closed! The pick-up must not swing under any circumstances.

Settings of buttons during individual actions

Settings during sweeping, scarifying or flail mowing

"Pick-up" pressure switch switched on, the yellow control lamp must light up. Press the button once, if necessary.



During the working process, the hydraulics must be in floating position.

Move container upwards

Not for version with bottom discharge (AMM 120 BE, AMM 150 BE, AMM 180 BE)



Switch off PTO drive. Caution: the toolings can continue to run.



Only drive the container upwards in a level place. Never lift up the container in a hillside situation. Danger of tipping.

Switch off the "Pick-Up" pressure switch - the yellow indicator lamp next to the switch no longer lights up. This prevents uncontrolled lifting and lowering of the pick-up.

Press and hold the "Move container upwards" button, the red indicator lamp next to the switch lights up. Use the operating lever of the hydraulics in the towing vehicle to move the container upwards.

Opening of container



Switch off PTO drive. Caution: the toolings can continue to run.



Do not open the container under open-air lines.

Switch off the "Pick-Up" pressure switch - the yellow indicator lamp next to the switch no longer lights up. Press the button once if necessary. This prevents uncontrolled lifting or lowering of the pick-up.

Press and hold the "Open container" button, the red indicator lamp next to the switch lights up. Use the operating lever of the hydraulics in the towing vehicle to move the container upwards.



Closing of container

Switch off the "Pick-Up" pressure switch - the yellow indicator lamp next to the button no longer lights up. Press the button once, if necessary. This prevents uncontrolled lifting and lowering of the pick-up.



Make sure that no one is within the danger zone.

Move the control lever of the hydraulics in the towing vehicle to floating position. By pressing the button "Open container" lower the container, the red control lamp next to the button lights up.

Lowering container

Not for version with bottom discharge (AMM 120 BE, AMM 150 BE, AMM 180 BE)

Switch off the "Pick-Up" pressure switch - the yellow indicator lamp next to the button no longer lights up. Press the button once, if necessary. This prevents uncontrolled lifting and lowering of the pick-up.



Make sure that no one is within the danger zone.

Move the control lever of the hydraulics in the towing vehicle to floating position. By pressing the button "Move container upwards", lower the container, the red control lamp next to the button lights up.

Placing the AMM

- Close the container completely, using the float position of the hydraulics and the "Open container" button.
- Lower the container completely via the float position of the hydraulics and press the "Raise container" button.
- Move pick-up to the upper stop.



Place the AMM on a flat surface and place wedges under it at the wheels.

- Close shut-off valve at AMM.
- Unplug the control and lighting cables.
- Relieve hydraulics through floating position.
- Disconnect the hydraulic hose.



If these things are not observed, pressure can build up in the hydraulic line, making it difficult to reconnect the hydraulic line to the towing vehicle.

Store the control unit in a dry and dirt-free place until the next time it is used.

Wear parts

Broom, flail and scarifying blades.
Hydraulic lines must be replaced after 6 years!
All illuminants of the lighting.
Tires and feeler wheels.
Brake pads on AMM with overrun brake

Elimination of errors

Noise on the drive chain:

Check chain tension and retighten if necessary.

Container is not filled properly:

Clean vent screen on container and pick-up, replace sweep bars if necessary, check PTO speed.

Sweeping noise too loud:

Pick-up set too low, check PTO speed. Retighten the sweep bars, if necessary.

Scarifier pick-up bounces:

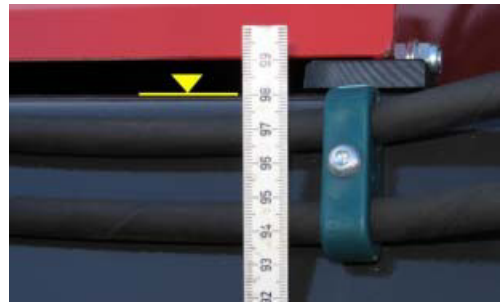
The soil to be worked is dried out or too uneven. The scarifying blades are dull (replace).
If the soil is very matted, it is recommended to remove every second blade.

Working equipment

Basic setting of AMM



The drawbar must be adjusted in inclination so that the distance from the top edge of the rectangular cross tube to the floor is 980mm.



Basic setting

The AMM must be attached to the towing vehicle. For the basic setting of the working height, the towing vehicle and the AMM must be on a level surface.

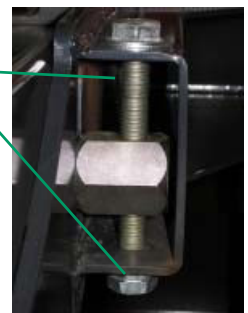
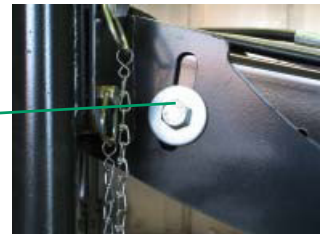
Loosen the transverse screw of the drawbar clamp.
Loosen the lock nut and the nut of the adjusting screw.

Using the adjustment screw, set the edge of the rectangular tube to the correct height - 980mm.

Tighten the nut and counter nut of the adjusting screw.

Tighten the transverse bolt of the drawbar clamp.

Then make the height adjustment for the individual working devices.



In the case of an AMM with brake, the brake linkage must be checked and adjusted if necessary. Pay attention to the location of the pick-up hanger pivot point!

Sweeping Pick-Up

Setting sweeping Pick-Up

Move the AMM to a level and paved area. Lower the pick-up to the ground - hydraulic float position.

Adjust the sweeping pick-up via the jog wheel spindle so that the sweep bars run approx. 3 cm above the ground. Drive (sweep) a few meters and check the sweep pattern. If necessary, correct the setting again using the depth guide spindles.

Scarifier pick-Up

Setting scarifier pick-up

Move the AMM to the square to be worked. Lower the pick-up to the ground - hydraulic float position.

Adjust the scarifier pick-up via the sensing roller spindles so that the working blades lightly scrape the ground. Now drive a few meters on the terrain to be worked on a flat place. Check the depth of the slots. If necessary, correct the setting on the sensing roller spindles again.

Mowing Pick-Up

Setting mower pick-up

Move the AMM to a level and paved area. Lower the pick-up to the ground, the lifting chain must be unloaded.

Adjust the mower pick-up via the height adjustment screws so that the working blades run approx. 5 cm above the ground. Drive a few meters on a meadow and check the cut. If necessary, correct the setting again at the screws of the height adjustment.



Replacing working equipment

Removal of used Pick-Up

Empty the collection container completely.

Close the container and move it all the way down. Place one wheel chock in front of and one behind each wheel. Drive pick-up all the way to the top - lift out.



Disengage the PTO drive, switch off the engine and remove the ignition key.

Remove the drive shaft.

Unhook side springs of pick-up at the upper securing bolts - one spring on each side.



Caution: springs are under tension.

Move the pick-up approx. 5 cm downwards, the pick-up must be able

Unhook the lateral lower links leading to the wheels. (Keep the fuse element in a safe place)

Lower the pick-up completely to the ground via the latching hydraulic float position; the chain must be unloaded.



Attach the pick-up change-over support at the side. There is a change-over support for each side. These change supports prevent tipping backwards when changing the pick-up.

Unscrew the pick-up change supports evenly on both sides until the towing eyelet is relieved of load

Pull the towing pin of the towing vehicle out of the towing eye of the AMM. Carefully drive the towing vehicle forward until the towing eye is free.

Turn up the exchangeable supports until the pick-up can be pulled out freely.

Uncouple hydraulic line.

Unplug control cable.

Remove lighting plug.

Unplug cable of drive shaft monitoring. Drive away towing vehicle.

Remove support wheel.

Unhook the pickup hanger. (Store bolts securely) Lift hanger and drive pick-up out in direction of travel.



Caution: considerable danger of tipping over! Never remove the lateral pick-up supports when the pick-up is removed.



The exchangeable pick-up supports may only be used when the container is emptied, lowered, closed and the pick-up is lowered.

37_1

Mowing unit starting from 2015:

For the mowing unit (from year of construction 2015), the **discharge plate attachment** is required. When changing onto another equipment, this **must** be **removed**.



Remove discharge plate attachment.

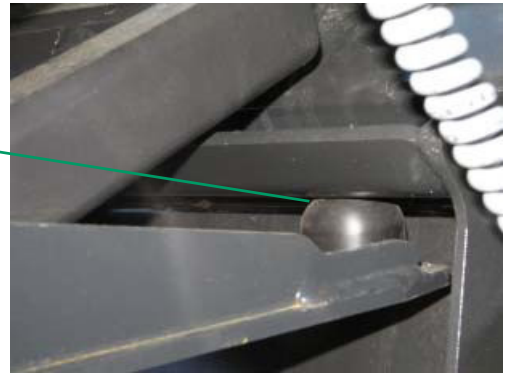
Fitting of new Pick-Up

The lateral exchangeable pick-up supports are attached and extended to such an extent that the pick-up can be retracted from the front. Support wheel removed.

Lift up hanger, push new Pick-up under the drawbar from the front.

Retract hanger, secure with bolts. The plastic buffers of the hanger must be retracted under the horizontal support angle.

Retract the exchangeable pick-up supports until the towing vehicle can be hooked onto the towing eye of the drawbar.



Make sure that no one stands between the towing vehicle and the AMM when moving backwards.

Attach AMM to towing vehicle. Secure the AMM with the wheel chocks to prevent it from rolling away.

Install the drive shaft on the pick-up, the locking pin must engage perceptibly - please make sure to check this. Hook in the chain of the rotation protection.



Disengage the PTO drive, switch off the engine and remove the ignition key.

Plug in cable of drive shaft monitoring.



Remove lateral Pick-up change-over support.

Install the drive shaft at PTO drive of the towing vehicle, the locking pin must engage perceptibly - please make sure to check this.

Connect hydraulic line.

Plug in control cable.

Plug in lighting plug.

Lift out pick-up almost completely - pick-up must still be able to swing slightly. Close the hydraulic shut-off valve of the AMM so that the pick-up cannot be lowered unintentionally.

Hook in the lateral lower links leading to the wheels and secure them with the securing element.

Open the hydraulic shut-off valve and completely lift out the pick-up. Lift up to the limit stop.



Close hydraulic shut-off valve.

Hook in lateral springs of the pick-up, one spring per side.

Check working height of pick-up, depending on equipment.

Remove the wheel chocks from the wheels and store them in the holders provided on the AMM.



39_1

Mowing unit starting from 2015:

The unloading plate attachment is required for the mowing unit (as of 2015).

When changing to the mowing unit, it must be inserted.



deutsch

Insert the unloading plate attachment and screw it tight.

Maintenance work

After each use

To ensure optimum container filling, the receptacle and the vent screen must be thoroughly cleaned.



Repair, maintenance and cleaning work as well as the removal of malfunctions may only be carried out with the drive switched off and the motor at standstill! Remove the ignition key!

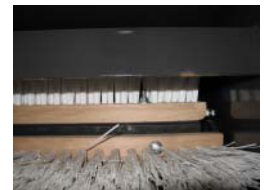


Make sure that the air pressure is correct. 2.5 bar.



After the first 5 operating hours

Check all screw connections. With mounted scarifying or mowing pick-up, also tighten blade screws if necessary. Repeat this monthly.

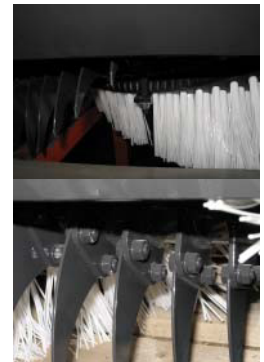


Once a month

Lubricate drive shaft.

After each pick-up, retighten broom rails.

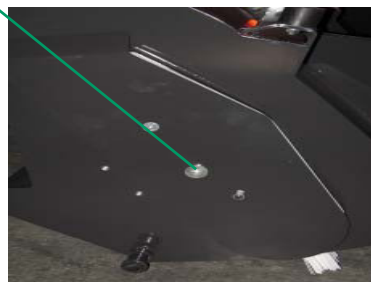
In case of a scarifying pick-up, also tighten the blade screws.
Replace damaged scarifying blades, if necessary.



On a mower pick-up, check that the flails are securely attached.
Replace damaged mower flails. Always replace opposite flails in pairs.



Check chain tension. (large sealing plug on each chain case cover).



Yearly

Inspect the entire unit and check welded joints for cracks.

- Lubricate grease nipples at pick-up touch wheels.



- Grease nipples of spring axes.



In the chain boxes, check the level of the fluid grease, (one large plug on each side).



Adjustments to the brake system may only be carried out by trained specialist personnel.

- Readjust the overrun brake if necessary.
- Check brake linings and replace, if necessary.

Retightening chain on rh side, seen in direction of travel

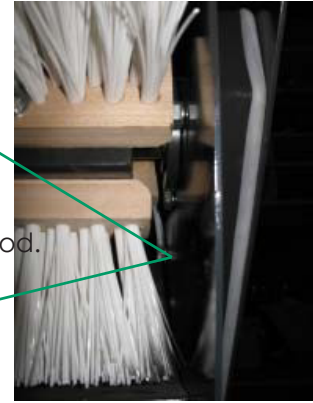
On the inside of the pump-motor unit, loosen the M10 screw in the slotted hole guide.



Readjust the chain tension on the threaded rod.

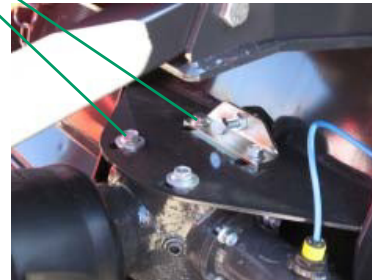
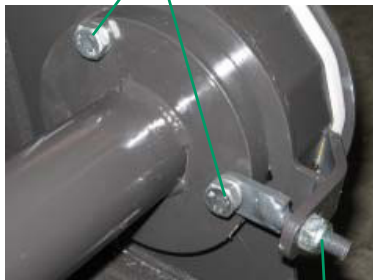
Tighten screw M10.

For checking purposes, there is a sealing plug in the chain case cover.



Retightening chain on lh side, seen in direction of travel

First loosen the screws on the gearbox (4 on the bottom, 4 on the top) and on the gearbox extension on the chain case (3 pieces).



Retighten chain tensioner.

Turn the transmission tensioner the same number of turns as the chain tensioner.



A plug is located in the chain case cover for checking purposes.

Tighten all screws.



43_1

Mowing unit starting from 2015:

monthly or after 50 operating hours

Depending on what comes first.

Relubricate the rotor bearings with **TOTAL MULTIS EP2** rolling bearing grease or equivalent quality.



In direction of travel left

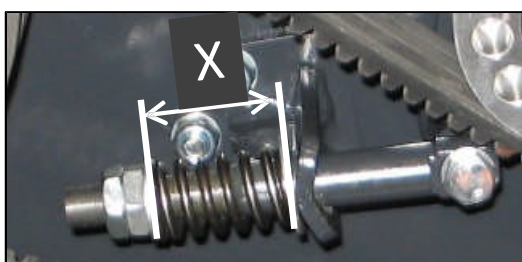
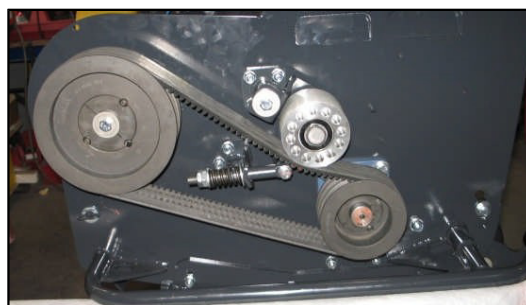


In direction of travel right

Yearly

Check belt tension. Check spring preload dimension $X=45\text{mm}$ and adjust, if necessary.

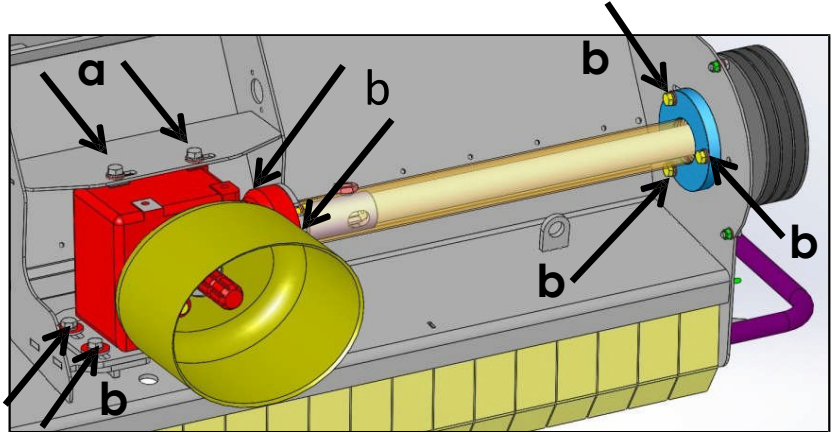
Replace worn or broken belts!



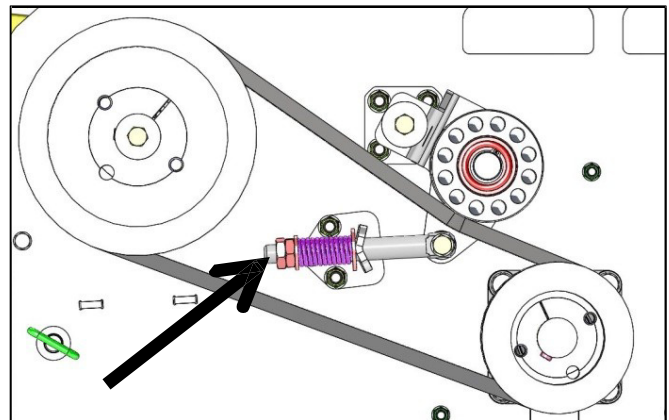
Replace belts

Always replace complete belt set!

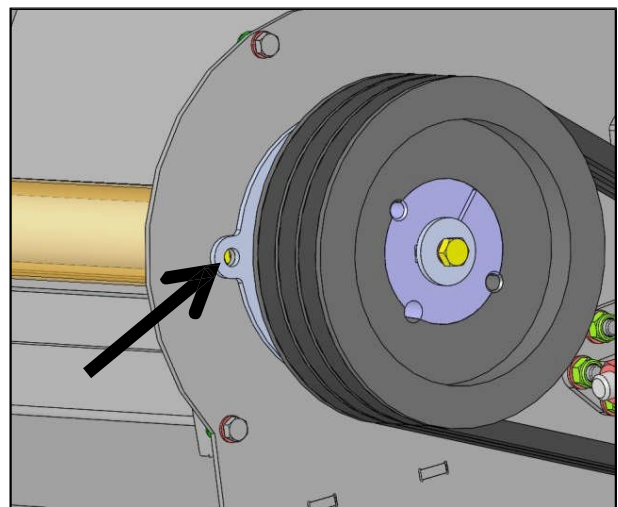
- Remove screws "a" completely (2x).
- Slacken screws „b“ (7x).
- Push the gear unit as far as possible towards the housing.



- Remove the adjusting nuts and the spring.
- Remove all belts and insert new ones.



- Push the gear unit to the foremost position (the inspection hole on the housing and on the sheet metal disk are congruent).
- Reassemble spring with washers and adjusting nut.
- Set belt tension as described on page 43_1 (dimension X=45mm).



Driving on public roads

The container must be closed and locked. The lighting at the towing vehicle must be connected at the respective lighting socket. Terminal diagram of the 7-pin trailer connector according to DIN 72577 / ISO 1724 with 12Volt supply voltage. PTO shaft must be switched off. Pick-up must be lifted until limit stop. Support wheel must be located in uppermost position. The machine may be moved on public roads only at the maximum speed permitted for the AMM.



The shut-off valve at the hydraulic block must be closed when moving on public roads.



Observe the permissible trailer loads of the towing vehicle. See the documentation on the towing vehicle for information on technical data.



It should be noted that a separate brake is not required on single-axle trailers if the vehicle combination achieves the braking deceleration prescribed for the towing vehicle and the axle load of the trailer does not exceed half the empty weight of the towing vehicle, but does not exceed 3 tons. In this case, the maximum speed of 25 km/h permitted for the AMM must not be exceeded.

Weights of cuttings



Make sure that the transported cuttings together with the empty weight of the AMM do not exceed the permissible total weight.

Wet grass has a weight of approx. 200 to 250 kg/m³.

Technical prerequisites for carrier vehicle

Electrical connection

For the operation of the AMM, the towing vehicle requires an on-board voltage socket DIN/ISO 4165 with 12 volts voltage with a minimum load capacity of 5 Ampere.

Lighting socket according to ISO 1724 (DIN 72577) for the lighting of the AMM.

Hydraulic connection

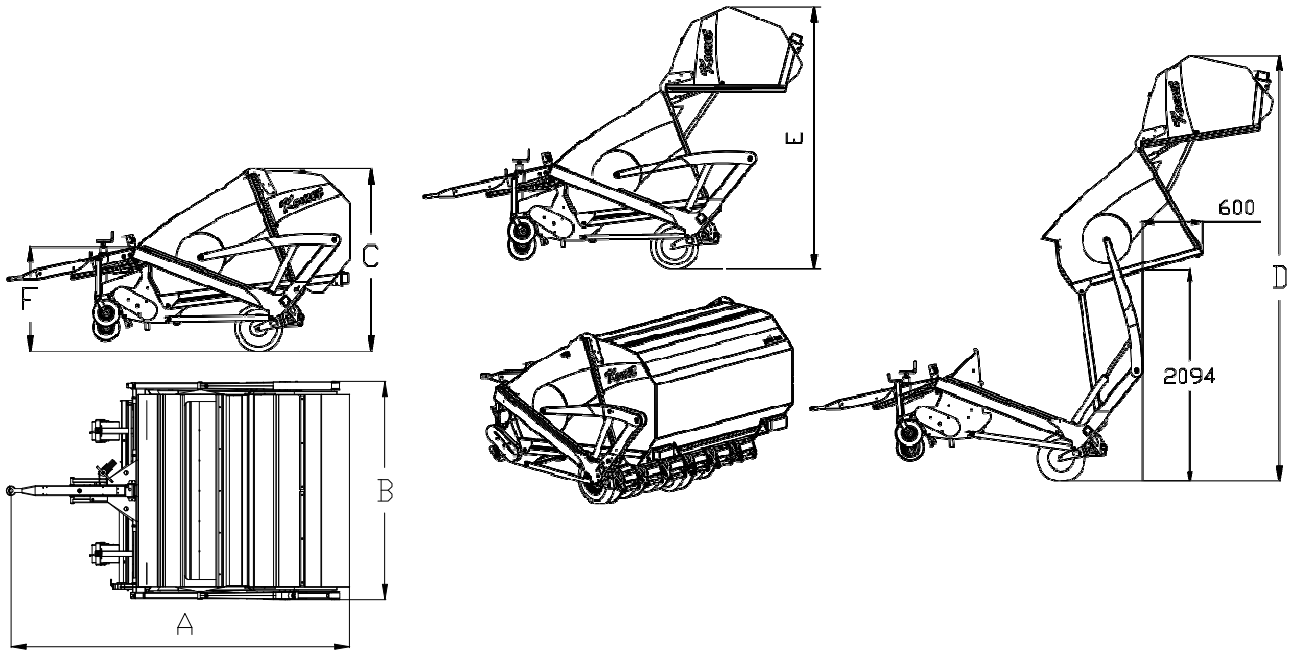
Operation of the AMM requires a single-acting hydraulic circuit with latching float position and 180 bar minimum pressure.

PTO drive

The PTO drive of the towing vehicle should be designed for a nominal speed of 540 rpm. Deviating nominal speeds on request.

A sweeping or scarifying pick-up requires a PTO power of 20 kW. Approximately 30 kW of PTO power is required for a mower pick-up.

Data sheet with contour drawing



Data sheet

Multi-functional towing machine AMM

Types	Capacity m ³	adm. total weight	Number of wheels	adm. max. speed km / h	Working width cm	Length A cm	Outer width B cm	Height C cm	Height D cm	Height E cm	Empty weights		
											Sweepin	Scarifying	Flail
AMM 120 BE	2.3	1800	4	40 / 25	120	340	130	180	-	260	690 kg	702 kg	742 kg
AMM 150 BE	2.8	1800	4		150	340	160			260	750 kg	777 kg	820 kg
AMM 150 BE / G	4.5	1800	4		150	390	160			305	810 kg	837 kg	880 kg
AMM 150 HE	2.8	1800	4		150	340	185		425	260	960 kg	987 kg	1030 kg
AMM 150 HE / G	4.5	1800	4		150	390	185		470	305	1086 kg	1113 kg	1156 kg
AMM 180 BE	3.3	1800	4		180	340	190		-	260	875 kg	914 kg	959 kg
AMM 180 BE	3.3	2590	6		180	340	190			260	915 kg	954 kg	999 kg
AMM 180 BE / G	5	1800	4		180	390	190			305	935 kg	974 kg	1019 kg
AMM 180 BE / G	5	2590	6		180	390	190			305	975 kg	1014 kg	1059 kg
AMM 180 HE	3.3	1800	4		180	340	215		425	260	1010 kg	1049 kg	1094 kg
AMM 180 HE	3.3	2590	6		180	340	215		425	260	1050 kg	1089 kg	1134 kg
AMM 180 HE / G	5	1800	4		180	390	215		470	305	1146 kg	1185 kg	1230 kg
AMM 180 HE / G	5	2590	6		180	390	215		470	305	1186 kg	1225 kg	1270 kg

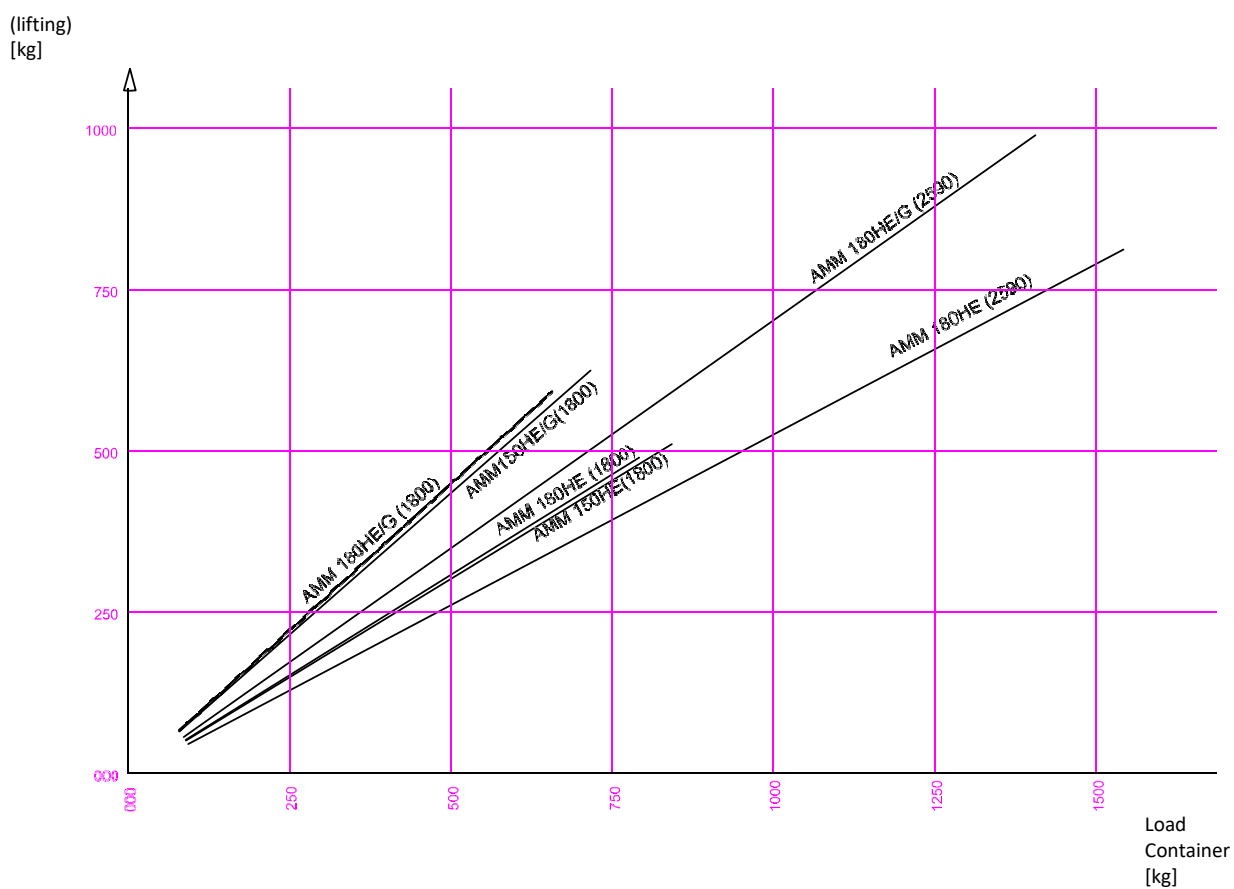
BE low-dump system; HE high-dump system; /G big container

Filling quantity gear oil mower pick-up-gear (SAE 80W/90 GL4): 1.30 L

Filling quantity gear oil sweeping/scarifying pick-up-gear (SAE 80W/90 GL4): 0.60 L

Drawbar loads for AMM with high-dump system

- Observe max. support load!
- Observe also lifting load (reversed support load) during high-dumping of container at the trailer coupling.
- Check with manufacturer of carrier vehicle:



- Load container = adm. total weight – empty weight AMM
- (2590)-values in diagram = adm. total weight (kg)

EC Declaration of Conformity in terms of the EC Machinery Directive 98/37/EC

We herewith declare that the machine described below, due to its design and construction as well as the version placed on the market by us, complies with the relevant fundamental health and safety requirements of the

EC Machinery Directive, as well as the directives, standards and other technical regulations listed below.

If the machine is modified without our consent, this declaration shall cease to apply.

Designation: Multi-functional towing machines **AMM**

Machine types: AMM 120 BE
AMM 150 BE
AMM 150 HE
AMM 150 HE / G
AMM 180 BE
AMM 180 HE
AMM 180 HE / G

Vehicle identification number: : _____

Relevant EC machinery directives:

EN standards:

EN 292-1, EN 292-2, EN 294, EN 349, EN 1050, EN 1553

EMC standards: **72/245/EG** in version **2005/83/EG**

Rettenbach a. A, April 2008

Place, date

Managing director

Details of the signatory

Kugelmann Josef

