

LIGHTWEIGHT - GENTLE ON FORAGE - LOW ENERGY CONSUMPTION

SECO DUPLEX





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Advantages of the double blade mower

Minimum power requirement

The power requirement of less than 2 hp / meter operating width measured by the Federal Institute for Agricultural Engineering (BLT) Wieselburg, Austria, illustrates the low energy input required for powerful mowing. A double blade mower combination with 9 meters has a power input of 18 hp, a disc mower requires about 5 times this drive power.



Minimum ground pressure

Double-blade mowers are significantly lighter than rotary mowers due to their design. They have a weight of about only one third of that.

Soil compaction and hub damage can be avoided with the use of double-blade mowers.

Improved regrowth behavior and cutting results

In rotary mowers, the forage is cut off by the fast rotating blades. The double-blade mower cuts off the plants with a shear cut. This results in a straight cut, which significantly improves the regrowth of the plants.



STRONG ARGUMENTS



Clean forage

Forage contamination is significantly lower when mowing with double-blade mowers than when mowing with rotary mowers because contamination, e.g. from a molehill, is not distributed throughout the forage.



Perfect forage deposit

During mowing with the double-knife mower, the forage is deposited completely homogeneously and evenly on the surface. The result is excellent drying behavior of the forage, and turning can be significantly reduced.



Safe matter

With the double-blade mower, unlike rotary mowers, there is no risk of foreign bodies, such as stones, being thrown away and damaging machines or even injuring people.



Gentle for amphibians and insects

Double-blade mowers protect amphibians, insects and wildlife to a high degree. The number of injured and killed animals is provably many times higher when mowing with rotary mowers. Furthermore, the dead animal parts remain in the forage and cause various sicknesses in the animals that eat the forage.

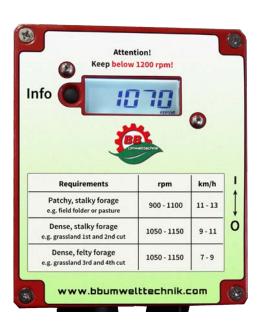




Double-blade mowers from BB - Umwelttechnik The ideal alternative.

Long lifetime of the blades

Since the correct ratio of travel speed and knife cutting speed is a very important factor for a long lifetime of the knives, we have developed a revolution counter with integrated operating hours counter, which always reflects the speed of the cutterbar drive. A table showing the parameters of the appropriate relationship between ground speed and cutterbar drive speed helps to adjust the rpm or the driving speed. Anything else is a "blind flight" when mowing with a double-blade mower and can cause significant damage to the mower due to incorrect speeds.





Cutting units with smooth lower knife

Tests in grass cutting have clearly proven that the service life of knives with a smooth lower blade is significantly higher than when using serrated lower blades.

Serrated bottom knives, on the other hand, have advantages in extremely stalky crops, such as hemp or reed.

Oil temperature monitoring

The use of oil coolers (optional) ensures an ideal oil temperature and consistent cutting performance, even on long and hot working days. All machines with their own oil supply are equipped with a thermometer as standard to always have information about the oil temperature.



STRONG ARGUMENTS





Overload protection

When the cutterbar makes contact with an object, the mower reliably deflects to the rear / upwards.

The pressure relief valve of the hydraulic drives is set so that the cutterbar stops if a foreign object gets into the knife. This prevents damage to the cutterbar.

Own oil supply

Basically, all BB - Umwelttechnik doubleblade mowers are equipped with their own oil supply. A large-volume hydraulic oil tank, return flow filter and large-dimensioned pipes ensure reliable drive of the cutterbar. Optionally, the solo mowers can also be operated via the hydraulics from the carrier vehicle.



Flexible cutting heights from 4 cm

Depending on customer requirements, the mowers can be equipped with skids of different heights. From a minimum of 4 cm to a maximum of 20 cm, all cutting heights can be supplied.

NEW! Two different cutting heights are possible with one skid! For example, by turning the skid, you can switch between 5 and 7 cm cutting height.

Modular design

Due to the well thought-out modular design, many machines can be upgraded or converted without additional expense, e.g. a standard rear side mower can be upgraded to a rear butterfly mower at any time.

FRONT MOWER ECO









- NEW! Weiste triangular attachment incl. threepoint attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Parking supports
- Adjustable pressure relief valve protects the cutting unit in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
- Drive with own oil supply, i.e. via front PTO 1,000 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 700 rpm
- Alternative: Drive without own oil supply, i.e. via hydraulics of the carrier vehicle; required: singleacting control unit, pressureless return and a liter rate of approx. 30 l/min
- Cutting unit widths from 1.95 to 3.10 meters
 (3.75 m possible on request)
- All parts powder coated or galvanized

Differences to STANDARD front mower:

Lifting out the mower with the front hydraulics, swinging via lower links
(Except for the pendulum support ention)

(Except for the pendulum support option)

- The cutting unit is close to the tractor, thus providing a better center of gravity.
- Lightweight design with a stable frame



FRONT MOWER ECO













- Equipment options:
 - Swath drums, small (Ø 50 cm) **①** or large (Ø 70 cm)
 - Swath boards, small or large
 - Three-point attachment CAT 1
 Instead of Weiste triangular attachment
 - Three-point attachment CAT 1+2 with integrated pendulum support ②
 - Reverse and transmission gear unit 3
 Only combinable with pendulum support version

Speed change from 540 to 1,000 rpm with or without reversal of rotation direction or only reversal of rotation direction possible

- Change of rotation direction of PTO shaft
- Different PTO speed
- Revolution counter, digital and illuminated 4

For monitoring the optimum cutting speed; with integrated operating hours counter

- PTO shaft
- Road traffic regulation set with LED position lights, LED turn signals and warning signs
- Relief spring set
- Oil cooler, temperature controlled 5
- Own oil supply mounted in the rear for front mowers 6: drive via rear PTO incl. three-point attachment CAT 2

Without PTO shaft

• Spare blade set

Technical data	FRONT mower ECO							
Seco Duplex	195 F ECO	210 F ECO	240 F ECO	275 F ECO	310 F ECO			
Cutting unit width (in meters)	1.95	2.10	2.40	2.75	3.10			
Weight (in kg)	280	300	330	360	390			
Transport width (in meters)	2.20	2.35	2.65	2.98	3.35			
Power requirement (HP)	5	5.5	6	7	8			

FRONT MOWER STANDARD











- NEW! Weiste triangular attachment incl. threepoint attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Parking supports
- Stable frame
- Adjustable pressure relief valve protects the cutting unit in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
- Drive with own oil supply, i.e. via front PTO 1,000 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 700 rpm
- Alternative: drive without own oil supply, i.e. via hydraulics of the carrier vehicle; required: singleacting control unit, pressureless return and a liter rate of approx. 30 l/min
- Cutting unit widths from 2.10 to 3.10 meters
- All parts powder coated or galvanized

Differences to ECO front mower:

- Own cutting unit lift via mower's own hydraulic cylinders with single-acting control unit
- Tractor-independent ground hugging due to own pendulum
- Also suitable for carrier vehicles without front hydraulics due to its own cutting unit lifting system
- Integrated cutting unit relief
- Optionally with hydraulic side shift (Shifting path: 35 cm)
- Optionally with collision protection
 (Flip-away mechanism that activates when the resistance to the cutting unit is too high, thus creates reaction time)

FRONT MOWER STANDARD











- Equipment options:
 - Swath drums, small (Ø 50 cm) or large (Ø 70 cm) **1**
 - Three-point attachment CAT 1
 Instead of Weiste triangular attachment
 - Road traffic regulation set with LED position lights, LED turn signals and warning signs 2
 - PTO shaft
 - Flip-away mechanism 4
 Cannot combined with swath drums!
 - Swath boards, small 5 or large
 - Oil cooler, temperature controlled 6
 - Revolution counter 7, digital and illuminated
 For monitoring the optimum cutting speed;

with integrated operating hours counter

- Additional relief springs
- Change of rotation direction of PTO shaft
- Different PTO speed
- Special frame for mowing very high cuttings, e.g. reeds
- Hydraulic side shift
- Parking foot, height adjustable
 For easier coupling to vehicles without front hydraulics
- Own oil supply mounted in the rear for front mowers 3: drive via rear PTO incl. three-point attachment CAT 2

Without PTO shaft

Spare blade set

Technical data	FRONT mower STANDARD						
Seco Duplex	210 F	240 F	275 F	310 F			
Cutting unit width (in meters)	2.10	2.40	2.75	3.10			
Weight (in kg)	202	215	246	292			
Transport width (in meters)	2.35	2.65	2.98	3.35			
Power requirement (HP)	5.5	6	7	8			

SIDE MOWER FRONT STANDARD









- NEW! Weiste triangular attachment incl. threepoint attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Own cutting unit lift via mower's own hydraulic cylinders with single-acting control unit
- Intelligent and adjustable collision protection
- Parking supports
- Adjustable pressure relief valve protects the cutting unit in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
 For cutting unit 3.35 m: with bar reinforcement
- Cutting unit can be shifted sideways on frame, thus easy adaptation to carrier vehicle possible
- Right- or left-hand cutting unit version possible
- Drive with own oil supply, i.e. via front PTO 1,000 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 700 rpm
- Alternative: Drive without own oil supply, i.e. via hydraulics of the carrier vehicle; required: singleacting control unit, pressureless return and a liter rate of approx. 30 l/min
- Cutting unit widths from 1.65 to 3.35 meters
- All parts powder coated or galvanized



SIDE MOWER FRONT STANDARD











- Equipment options:
 - Reverse and transmission gear unit ①
 Speed change from 540 to 1,000 rpm with or without reversal of rotation direction or only reversal of rotation direction possible
 - Change of rotation direction of PTO shaft
 - Different PTO speed
 - PTO shaft
 - Swath board, large
 - Road traffic regulation set with LED position lights, LED turn signals and warning signs
 - Oil cooler, temperature controlled ②
 - Revolution counter 3, digital and illuminated
 For monitoring the optimum cutting speed;

with integrated operating hours counter

- Feeler wheel under the drive shoe of the side cutting unit
 Necessary from a cutting height of 10 cm
- Own oil supply mounted in the rear for front mowers: drive via rear PTO incl. three-point attachment CAT 2
 Without PTO shaft
- Spare blade set

Technical data	SIDE mower FRONT attachment STANDARD						
Seco Duplex	165 F R/L	195 F R/L	210 F R/L	240 F R/L	275 F R/L	295 F R/L	335 F R/L
Cutting unit width (in meters)	1.65	1.95	2.10	2.40	2.75	2.95	3.35
Weight (in kg)	222	233	247	261	272	280	305
Power requirement (HP)	4.5	5	5.5	6	7	7.5	9

SIDE MOWER REAR ECO









- Three-point attachment CAT 1 + 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Defined cutting unit lift with two hydraulic cylinders
- Intelligent and adjustable collision protection
- Parking supports
- Adjustable pressure relief valve protects the cutting unit in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
- Drive with own oil supply, i.e. via rear PTO 540 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 320 rpm
- Drive without own oil supply possible on request
- Cutting unit widths from 1.65 to 2.95 meters
- All parts powder coated or galvanized

Differences to STANDARD rear mower:

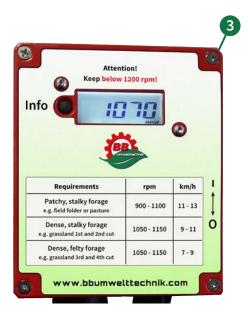
- Lightweight design
- Ideal for smaller carrier vehicles
- Right-hand cutting unit version only
- Maximum cutting unit width: 2.95 meters



SIDE MOWER REAR ECO







- Equipment options:
 - Swath board, large ①
 - Feeler wheel under the drive shoe of the side cutting unit
 Necessary from a cutting height of 10 cm
 - Revolution counter 3, digital and illuminated
 For monitoring the optimum cutting speed;
 - with integrated operating hours counter
 - PTO shaft
 - Change of rotation direction of PTO shaft
 - Different PTO speed
 - Spare blade set

Technical data	SIDE mower REAR attachment ECO							
Seco Duplex	165 H ECO	195 H ECO	210 H ECO	240 H ECO	275 H ECO	295 H ECO		
Cutting unit width (in meters)	1.65	1.95	2.10	2.40	2.75	2.95		
Weight (in kg)	180	187	194	206	217	225		
Power requirement (HP)	4.5	5	5.5	6	7	7.5		

SIDE MOWER REAR STANDARD









- Three-point attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Defined cutting unit lift with two hydraulic cylinders
- Intelligent and adjustable collision protection
- Parking supports
- Adjustable pressure relief valve protects the cutting unit in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
 For cutting unit 3.35 m: with bar reinforcement
- Drive with own oil supply, i.e. via rear PTO 540 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 320 rpm
- Alternative: Drive without own oil supply, i.e. via hydraulics of the carrier vehicle; required: singleacting control unit, pressureless return and a liter rate of approx. 30 l/min
- Cutting unit widths from 2.10 to 3.35 meters
- All parts powder coated or galvanized

Differences to ECO rear mower:

- Position of cutting unit on frame mechanically adjustable, e.g. for operation with twin tires or for adjustment of overcut to front mower unit
- Modular design allows a side mower to be upgraded to a rear butterfly mower at any time
- Right- or left-hand cutting unit version possible
- Maximum cutting unit width: **3.35 meters**



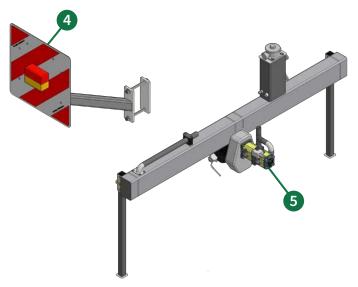
SIDE MOWER REAR STANDARD











- Equipment options:
 - Feeler wheel under the drive shoe of the side cutting unit 1
 - Necessary from a cutting height of 10 cm
 - Oil cooler, temperature controlled ②
 - Three-point attachment CAT 1 + 2
 - PTO shaft
 - Revolution counter 3, digital and illuminated
 For monitoring the optimum cutting speed; with integrated operating hours counter
 - Road traffic regulation set with LED position lights, LED turn signals and warning signs 4
 - Swath board, large
 - Change of rotation direction of PTO shaft
 - Different PTO speed
 - Additional pump for driving a front mower or pre-equipment for a butterfly mower
 - Only for drive with own oil supply
 - Spare blade set

Technical data	SIDE mower REAR attachment STANDARD							
Seco Duplex	210 H R/L	240 H R/L	275 H R/L	295 H R/L	335 H R/L			
Cutting unit width (in meters)	2.10	2.40	2.75	2.95	3.35			
Weight (in kg)	220	236	257	265	285			
Power requirement (HP)	5.5	6	7	7.5	9			







- NEW! Weiste triangular attachment incl. threepoint attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Defined cutterbar lift of the side cutting units with two hydraulic cylinders each
- Intelligent and adjustable collision protection for side cutting units
- Parking supports
- Adjustable pressure relief valves (for each drive separately) protects the cutting units in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
 For cutting unit 3.35 m: with bar reinforcement 1
- Mower control with control box 2
 - Cutting units can be lifted and lowered separately
 - Cutting units can be switched on and off separately
 - With integrated revolution counter to monitor the optimal cutting speed
 - With integrated operating hours counter
- Drive with own oil supply, i.e. via front PTO 1,000 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 700 rpm
- Cutting unit widths from 6.50 to 9.50 meters
- Single sided butterfly mowers as right or left hand cutterbar with cutting widths from 5.00 to 6.00 meters can be upgraded with a 3rd cutting unit at any time
- All parts powder coated or galvanized







- Excellent overview, as the whole machine is in the operator's field of vision. Barriers are seen without any problems. Full utilization of the operating width via cutterbars located in the field of view - no unnecessary overcutting
- With very wide carrier vehicles, e.g. with twin tires, no driving over standing forage
- Clear view to the front even in transport position
- Turnability: little space required at the headland
- Flexible due to large operating widths, low mower weight and low power requirement, thus interesting for smaller carrier vehicles
- For carrier vehicles with rear drive unit also possible as an option in rear-mounted version
- Can be used as a multi-purpose machine, e.g. for mechanical weed control





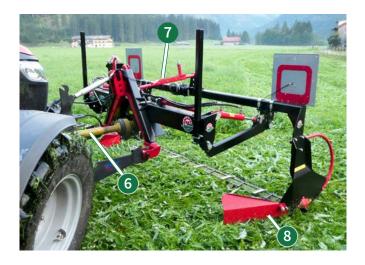


Mechanical weed control with hydraulically height-adjustable feeler wheel



Mechanical weed control by tensioning the side cutting units













Equipment options:

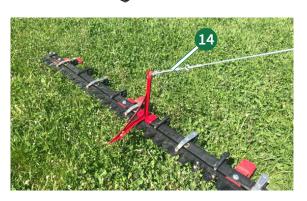
- Swath drums, small **③** (Ø 50 cm) or large (Ø 70 cm)
- Oil cooler, temperature controlled 4
- Road traffic regulation set with LED position lights, LED turn signals and warning signs
- PTO shaft 6
- Flip-away mechanism for the middle cutting unit

Not cobinable with swath drums!

- Swath boards, small 8
 For the middle cutting unit
- Swath boards, large
 For the outer cutting units
- Feeler wheel under the drive shoe of the side cutting unit

Necessary from a cutting height of 10 cm

- Additional relief springs for the middle cutting unit
- Reverse and transmission gear unit (1)
 Speed change from 540 to 1,000 rpm with or without reversal of rotation direction or only reversal of rotation direction possible
- Different PTO speed
- Hydraulich front PTO 12, drive via tractor hydraulics: approx. 80 l/min









Equipment options:

- Hydraulically height-adjustable feelerwheel for side cutting unit 3:25-100 cm
 For precise cutting height guidance of theside cutting units, e.g. for weed control
- Tensioning butterfly mower 14
 For stabilization of the side cutting units, e.g. for weed control
- Rapeseed cutting unit on middle cutting unit 15
 With hydraulic drive
- Mower control with joystick 16
 - Cutting units separately or together liftable and lowerable
 - Cutting unit separately or together can be switched on and off
 - Automatic functions (automatic lift / automatic shutdown of all cutting units at the headland))
 - With integrated revolution counter
 - With integrated operating hours counter
 - As a little gimmick, the joystick can be removed from the box without tools and mounted e.g. directly on the existing arm rest of the tractor
- Spare blade set

Technical data	FRONT BUTTERFLY mower					
Seco Duplex	650 F	700 F	800 F	850 F	900 F	950 F
Cutting unit width (in meters)	6.50	7.00	8.00	8.50	9.00	9.50
Weight (in kg)	790	800	820	850	890	920
Transport width (in meters)	2.98	2.98	2.98	2.98	2.98	3.35
Power requirement (HP)	17	18	20	22	24	26
Configuration (of the cutting units)	1 x 2.75 2 x 1.95	1 x 2.75 2 x 2.40	1 x 2.75 2 x 2.75	1 x 2.75 2 x 2.95	1 x 2.75 2 x 3.35	1 x 3.10 2 x 3.35

REAR BUTTERFLY MOWER







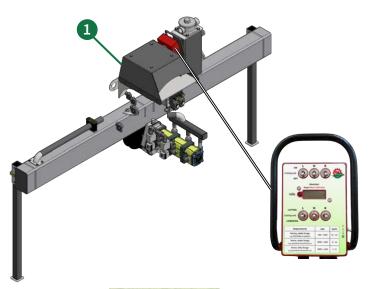




- Three-point attachment CAT 2
- Bidux cutting unit with Carbodux knife blades and unequal blade spacing
- Defined cutterbar lift of the side mowers with two hydraulic cylinders each and via tractor hydraulics with single-acting control unit
- Intelligent and adjustable collision protection for side cutting unit
- Parking supports
- Adjustable pressure relief valves (for each drive separately) protects the cutting units in case of overload
- With skids (cutting heights of 4-20 cm freely selectable)
 For cutting unit 3.35 m: with bar reinforcement
- Rear butterfly can be combined with front mower from 2.75 m cutting unit width
- Balanced weight distribution on the tractor when combined with a front mower
- Cutting units can be shifted on the frame, thus perfect adaptation of the overcut to the operating width of the front mower
- Optionally also with electrohydraulic control:
 - Cutting units can be lifted and lowered separately
 - Cutting units can be switched on and off separately
 - With integrated revolution counter for monitoring the optimal cutting speed
 - With integrated operating hours counter
- Drive with own oil supply, i.e. via rear PTO 540 rpm (rotation direction of the PTO shaft: clockwise as seen in the driving direction); operating speed of the PTO shaft during mowing: approx. 320 rpm
- Cutting unit widths from 7.00 to 9.00 meters
- All parts powder coated or galvanized

REAR BUTTERFLY MOWER

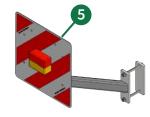
















- Equipment options:
 - Three-point attachment CAT 1 + 2
 - Mower conrol with control box 1
 - Cutting units separately lift- and lowerable
 - Cutting units separately switchable on and off
 - With integrated revolution counter
 - With integrated operating hours counter
 - Revolution counter, digital and illuminated

For monitoring the optimum cutting speed; with integrated operating hours counter

- PTO shaft
- Oil cooler, temperature controlled
- Swath boards, large
- Feeler wheel under the drive shoe of the side cutting unit 4

Necessary from a cutting height of 10 cm

- Road traffic regulation set with LED position lights, LED turn signals and warning signs
- Change of rotation direction of PTO shaft
- Different PTO speed
- Hydraulically height-adjustable feeler wheel for side cutting unit 6:25-100 cm
 For precise cutting height guidance of the side cutting units, e.g. for weed control
- Spare blade set

Technical data	REAR BUTTERFLY mower						
Seco Duplex	700 H	800 H	850 H	900 H			
Cutting unit width (in meters)	7.00	8.00	8.40	9.00			
Weight (in kg)	405	426	440	457			
Power requirement (HP)	13	14	15	16			
Configuration (of the cutting units)	2 x 2.40	2 x 2.75	2 x 2.95	2 x 3.35			

AUTOMATIC GRINDING MACHINE

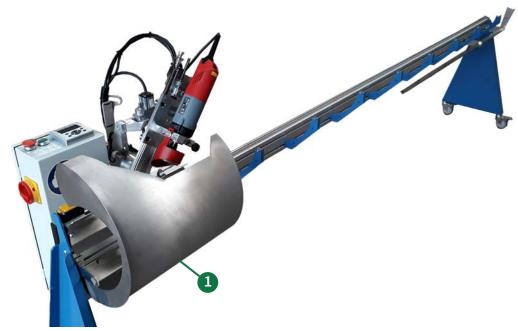








- Manual placing of the knife on magnetic holder, the grinding process of the complete knife is made automatically
- Automatic grinding machine switches off automatically after completion of the grinding process
- Each blade is ground individually: The material removal rate is the same on every blade, i.e. regardless of whether it is a new blade or an old blade, only as much as necessary is ground down.
- Special grinding body: no heat generation during the grinding process, therefore no structural changes (= loss of hardness) on the blade
- Exactly adjustable cutting edge angle: The result is a cutting edge that is in no way inferior to the grind of a new blade.
- Maximum grindable knife length: 3.35 m
- Equipment options:
 - Extension rail for automatic grinding machine for wall mounting: additional length of 4 m; thus e.g. 2 knives can be ground in one set-up
 - New! Dust basket ① collects up to 80% of the sanding dust; removable with one handle



MANUAL GRINDER "MESSERFIX"









- Knife is fixed on the device with clamps
- Grinding angle and the stops of the stroke can be adjusted individually
- Stroke movement and feed must be performed manually, positioning aid by means of handwheel
- With speed adjustable quality angle grinder from Metabo
- Maximum sharpenable double blade length without reclamping (depending on the Messerfix type):
 - 2.40 meters
 - 3.10 meters
 - 3.35 meters











Sustainability redefined!

The company BB - Umwelttechnik sets new standards as a manufacturer of double-blade mowers and comb rakes. Whether it's front rakes with operating widths from 2.5 to 7.5 meters or double-blade mowers with operating widths from 1.65 to 9.5 meters, we have the right machine for your requirements. Our customers benefit from a combination of ecology and economy in the double-blade mowers and comb rakes, made possible by the implementation of innovative ideas in the highest quality. Starting with the 3D - CAD - design, which simulates in advance the motion sequences and the power flow of the machines, to our own production, where only the highest quality materials are used, to the perfect powder coating, we do everything to offer you a high quality product.

Our goal is satisfied customers.

The company BB - Umwelttechnik. Agricultural technology for sustainable agriculture.

Quality made in Germany

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