

KT
Practice
Test

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for Amazone



Amazone
Profihopper 4WDi
in KT Practice Test

Amazon Profihopper 4WDi

Sophisticated (nearly) down to the last detail

Hardly has there ever been so little criticism from our testers: the Amazone Profihopper 4WDi was convincing in the tough KT Practice Test. In addition to the thoroughly thought-through concept, what the drivers appreciated most was the robustness of the machine. The machine though, does show a weakness in the ergonomic design of the controls.

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72 wing knives are fitted to the rotor shaft of the mowing unit and can be exchanged without tools – a very good point. The knives deliver the cuttings into the cross auger and conveyed into the centre to the feed auger and then into the collecting hopper.

By mid-September 2012 the Profihopper from Amazone had been delivered to our test location – the Parks department in Göttingen. For six weeks the machine was to be used for mowing, mulching and leaf collection. The testers were especially curious about the leaf collection. The Profihopper 4WDi was hopefully going to be able to preform, even on sports pitches, where very manoeuvrable machines are required. There, the Parks department actually uses ride-on mowers with a front-mounted mowing system. In addition, colleagues from the cemetery maintenance department wanted to make use of the Profihopper for a week to check whether it would match their work requirements.

Engine: smooth running three cylinder

The 3-cylinder diesel engine from Lombardi has a capacity of 18 kW/24.5 HP. The water-cooled engine provides 1 litre cylinder capacity and was impressive in the KT Practice Test with its excellent performance due to its quiet running. “Hardly any vibration arises, therefore nothing can be criticised”, one of the testers noted in the report. The engine is mounted in the frame on rubber blocks which is what surely helps to minimise the vibration. Due to having no cab, at the engine’s operating speed, the noise level felt subjectively high at the driver’s ear. “Therefore good hearing protectors are necessary”, one driver noted in the test report. According to tests by Amazone, in fact the total noise of the machine – both of the engine and of the mowing unit – amounts to 105 dB at the driver’s ear, this being well below the legal limit of 135 dB.

Under almost all conditions the capacity of the engine was sufficient. Only when very dense, long grass (> 35 cm) had to be mulched, did the Profihopper die. Under such conditions Amazone, however, recommends, instead of the usual flail knives, the use of mowing knives instead which are supposed to offer a big

increase in mowing capacity for this situation. The mowing knives require less power because less air resistance is created.

Concerning the fuel tank capacity of the Profihopper, the opinions of our testers differed. Whereas one was perfectly satisfied with the 20 l diesel tank, another driver would have preferred a somewhat higher volume, because otherwise he could not manage a long working day and would have to refuel midway. This, however, also depended on the different operating conditions. In fact, pure mowing in continuously maintained areas requires significantly less energy than the mulching and the collection of longer grass. However, around the area of the diesel tank there is still some space left on the Profihopper to fit a larger tank. Perhaps Amazone should put a bit of thought into this area so that the diesel reserve would be sufficient under all conditions for an 8-hour working day.

The Testers judged access for maintenance work as being “very good”. The electrically-driven reversible fan is located on the left hand side of the machine and can be simply folded out for radiator cleaning.

If one intends to access the engine – for example, when checking the oil level – the collecting hopper is lifted hydraulically. Then the engine, well encapsulated against dirt, is located underneath a rubber plate which can be folded upwards.

The air filter is fitted to the right hand side above the diesel tank and can be opened without tools. However, cleaning the air filter is seldom necessary because Amazone has installed a cyclone pre-cleaner in the air intake. “This is a sophisticated solution”, one of the drivers says: “If necessary, I have emptied the pre-cleaner once or twice a day. However, I did not have to clean the air filter at all.” Especially under dusty conditions this solution pays off.

Regarding the KommunalTechnik Practice Test

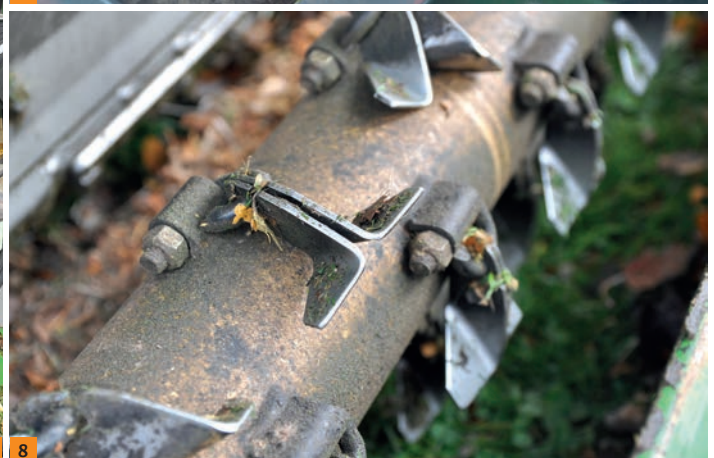
The test candidates for the Kommunal-Technik practice tests are checked by municipal companies for their practicality. For this purpose the machine is operated in the relevant areas for a significant period. KommunalTechnik does not test according to standardised procedures, such as DIN or ISO. The objective of our KT Practice Test is a descriptive demonstration of the suitability for daily use.

Hydrostat: the accelerator pedal is not fully convincing

Due to the hydrostatic drive of the Profihopper, the driver can steplessly adjust the speed. Amazone mounts a foot pedal on the machine which the driver’s foot rests on. When the driver tilts the foot forward the Profihopper moves forwards. The more the foot is tilted forward the faster the machine moves, up to a maximum of 12 km/h. “That is actually sufficient because for longer distances we transport our mowers in town on a trailer” said one of the employees of the Parks department, Göttingen.

Not all the drivers were satisfied with the ergonomics of the foot pedal. Especially when a constant speed was maintained over a prolonged time, the driver no longer sits in a relaxed position on the Profihopper. Here cruise control would be desirable so that the position of the foot could be changed from time to time. When the oil is cold, the hydrostatic system reacts roughly. The driver has to take this into account because otherwise, especially at junctions, he provides a somewhat inelegant performance when he slows down with an empty collecting hopper: then the Profihopper lifts at the rear and rests on the mowing unit. “This does not harm

- 1 The cutting height adjustment is carried out with the multi-purpose tool provided via the central spindle. The contour following via the two guide wheels, the support roller behind the rotor and the sophisticated kinematics of the supporting frame which carries the wheels and the roller is very good.
- 2 Sophisticated – the maintenance plan of the Profihopper is located underneath the fuel tank cover.
- 3 The 24.5 HP Lombardini diesel engine runs smoothly and is responsive. For maintenance work on the engine, the collecting hopper of the Profihopper is lifted hydraulically and the rubber cover is folded to the side.
- 4 The high lift emptying manages a loading height of 2.1 m.
- 5 The accelerator pedal did not impress all the drivers. For some drivers the position of the foot was uncomfortable over a prolonged period.
- 6 This switch activates the fill level indication in the display. When the driver carries on mowing, the cover lifts and a proximity switch is released that isolates the mowing drive automatically, preventing the overloading of the collecting hopper.
- 7 The knobs for the activation and deactivation of the mowing drive did not impress the drivers. A pull/push switch would be a better solution.
- 8 Robust knives: any change is carried out without tools and, after some practice, very quickly. The long wing knives were fitted to the test machine.
- 9 The cyclone pre-cleaner does, as one can see on the photo, a good job. This is the result after 4 hours of work.





Neat work – the cutting collecting system has impressed the staff from the Parks department, Göttingen.

the machine as it is robust enough, however, passers-by look a bit frightened” says one of the testers.

Chassis: very manoeuvrable

The Profihopper 4WDi belongs in the zero turn mower category. That means when the driver turns the steering wheel fully, the machine just about turns on the spot around one front wheel. “That is especially useful where one has to mow around trees or poles” praise the testers at the Parks department. The hydraulically-assisted steering functions smoothly.

On the Profihopper 4WDi, all the wheels are driven, but the rear wheels only come into play when the front wheels require support. Due to the sophisticated combination of mechanics and hydraulics the system functions without electronics.

The rear and the front wheels are connected in series. In case of slip on the front wheels, more power is automatically transferred to the rear wheels. No all-wheel or differential lock switch-over is necessary. Especially on slopes the all-wheel drive machines provide advantages when compared with a two-wheel drive Profihopper. This, the testers can confirm: even on a heavy sloping site, the Profihopper 4WDi

can be driven straight ahead astonishingly well. If, however, conditions became too wet, the machine, due to the turf tread tyres that were fitted, slipped down hill. For such purposes, a cleated tread is recommended. Moreover, some of the drivers considered the tyres to be too small.

Surely, the Profihopper with its standard tyres (20 × 10.00-10 6PR front and 16 × 6.50-8 4PR rear) is not “over-tyred” because the empty machine already weighs 1,100 kg. One tester managed to exceed the permissible total weight of 1,600 kg. During the test period the weather conditions, and so also the travelling ability, in all areas were ideal. “It would be very interesting to operate the Profihopper as well in wet conditions” commented one of the test drivers.

Operator console: has improvement potential

Regarding the operation of the Profihopper 4WDi, the following applies: “Short briefing, sit on it and start driving” without anymore ado; just as it should be, especially when operating with multiple drivers or temporary workers, where it is advantageous if they can familiarise themselves with the machine in a short time.

Most of the drivers liked the seating position. Testers who were taller than 1.80 m, however, would have preferred to be able to push the seat a bit further back so that they did not have to bend their legs so much.

Unfortunately our test machine was not provided with the optional seat heating. This the drivers would have liked on cold and windy days, even more so as it available at a cost of just 184 Euro.

A cab, providing better protection, however, most of the drivers didn’t want. “We frequently operate underneath trees and bushes. If we had a vehicle with a cab, we could not drive so close and would have to do more manual work” was the reasoning behind this comment.

The steering wheel inclination can be adjusted according to the driver – and is very good. Underneath the steering wheel is a display which shows the driver the key information of the machine’s status. This includes, for example, the engine temperature. In addition, the driver is informed when the collecting hopper is full. If the driver ignores this signal, the mowing unit is deactivated automatically when a switch inside the collecting hopper is activated by the collected cuttings. So, the collecting hopper cannot be overloaded.

The arrangement of levers and switches of the mowing unit and the collecting hopper did not impress the testers. One of the drivers would have preferred to have a multi-function armrest on the seat; other drivers would have liked longer levers, so that one has not got to lean over to reach it. So, there is still potential left in the area of ergonomics.

This is how our testers at the Parks department, Göttingen judged the Amazone Profihopper 4WDi

Engine	
Tractive power	++
Smooth running	+
Tank volume	o
Drive	
Maximum speed	o
Operation	o
Traction ability	++
Grass cuttings/collecting hopper	
Mowing/mulching performance	+
Lifting height/speed	+
Grass cuttings conveying	++
Collecting hopper capacity	+
Emptying collecting hopper	++
Driving position	
Accessibility	+
Seating comfort	+/-*
Noise level	-
Visibility	++
Ergonomics	-
General	
Manoeuvrability	++
Material processing and quality	++
Daily maintenance	++
Change of the flail knives	++

(++) = very good, (+) = good, (o) = average,

(-) = adequate, (--) = inadequate

* for drivers of less than 1.8 m height good, for taller ones only adequate

Technical data: Amazone Profihopper 4WDi

Engine	Lombardini 3 cylinder diesel engine, water cooled
Capacity	18 kW/24.5 HP
Tank volume	20 l
Drive	hydrostatic (forwards: 0–12 km/h, reverse: 0–6 km/h)
Mowing/Collecting system	
Working width	1,250 mm
Collecting hopper	730 l
Max. discharge height of the collecting hopper	2,100 mm
Mowing unit isolation	Electro-magnetic
Dimensions and weight	
Length/width/height	2,785 mm/1,482 mm/1,994 mm
Empty weight	1,100 kg
Permissible total weight	1,600 kg
Test tyres	
Front	20×10.00 – 10-6PR
Rear	16×6,50 – 8-4PR
List price without VAT	
Profihopper 4WDi	32,750 Euro
Seat with heating	184 Euro
Warning beacons	133 Euro
Road traffic kit with lights	1,105 Euro
Set of sharpened wing knives (H77) (fitted as standard, well-suited for mowing grass, collecting leaves and mulching)	274 Euro
Set of sharpened wing knives (H60) (mostly used for paddock hygiene and in combination with the 3 mm scarifying knives)	274 Euro
Set 3 mm scarifying knives (one set is included in the standard execution)	85 Euro

KT Practical Test team Parks department, Göttingen

The Parks department in the city of Göttingen, with its 130,000 inhabitants, is in charge of all green areas, trees, roads, byeways and sports pitches in the town. The staff of approximately 100 employees take care of 252 ha of green space, 30,000 trees, 400 km roads and byeways and 125 sports pitches.

If you have queries regarding the test, please contact the Parks department of the city of Göttingen, Volker Hempfing
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The testers did not understand the fact that there is one knob for starting and one knob for stopping the mowing drive, whereby both are shaped the same. "That is not good. In case the driver has to switch off the mowing drive quickly it could be that he accidentally presses the wrong one. In our opinion a pull/push switch would be better for the mowing unit, as known from the PTO shaft control on small tractors" said one of the test drivers.

Also Amazone should find a better place for the indicator switch. This should be moved away from the control console to the right hand side of the seat and be better located in form of a lever underneath the steering wheel.

Mowing unit and collecting hopper: there is nothing better

Here, all testers were of the same opinion: The 1.25 m rotor mower does a very good job. On soft, short grassed lawns, for structure reasons, the cutting performance is not perfect; however, the Profihopper is able to mow areas where a flail mower would have long since failed. On the rotor, spinning at 3,400 R.P.M. 72 flail knives and/or 36 scarifying knives are fitted, depending on whether one intends to mow or to scarify. The shaft rotates in the opposite direction to the direction of travel of the vehicle. The air

stream, which the rotor creates with its knives, the grass is consistently raised prior to cutting.

The cuttings are delivered upwards and to the rear into a cross auger which conveys the cuttings to the centre where the central 150 mm diameter auger provides the transport into the collecting hopper. Amazone calls this system "PowerCompactor". During transport, the cuttings are so compressed that, in the end, 1,000 litres of cuttings should fit into the 730 l collecting hopper. Our testers from the Parks department were sceptical. However, the KT Practice Test has shown that Amazone is not lying. "The collection, and the transport, of cuttings or leaves perform very well, even in wet conditions" one of the drivers praised. The augers cope with even large amounts of leaves without a problem. During the whole test period the cross auger only blocked once. But even this was not too big a problem. Amazone provides a multi-purpose tool which is also used for the height adjustment of the mower and for opening of the mowing unit cover. This tool can be used on the auger shafts so that any blockages can be cleared manually.

The Parks department, Göttingen tries to collect as few leaves as possible to save disposal costs. Often the areas and the leaves on the surface are mulched. Therefore the excitement was huge on how the mowing unit of the Profihopper would manage this task. Initially it has to be stated that the conversion between collecting leaves and mulching is done in two minutes. Only one plate has to be inserted to cover the cross auger. This plate is located, well protected, on top of the mowing unit so that it is always present and allows the quick change between mowing and mulching.

"The mulching job that the Profihopper does is very impressive. Even with relatively large quantities, the leaves are intensively shredded on the surface and mixed with the blades of grass" said one of the test drivers.

Also praised was the high-lift emptying of the collecting hopper. The Profihopper can unload the cuttings up to a height of 2.1 m. This was sufficient for all the needs of the Parks department, Göttingen.

Conclusion:

The Profihopper 4WDi made a good impression on the staff in the Parks department. Concerning the operating performance of the machine there was nothing to criticise. The mowing unit cuts perfectly and, even under wet conditions, the cuttings are safely delivered via the conveying augers into the large collecting hopper.

With its four wheel drive, the Profihopper operates safely also on slopes. When purchasing a Profihopper one should always select the four wheel version, our testers think.

It is just the ergonomics that are still worthy of improvement. The right hand operating console is too low so that the driver has to lean to the right to access the controls.



Even on slopes the Profihopper 4WDi looked good. Thanks to the four wheel drive, the vehicle slipped only very slightly downhill.

Most likely our testers would have kept the Profihopper 4WDi in their yard. However, there were two points against it – first the Parks department had already used up their budget for 2012 and second the dealer had already sold our “Test-Hopper” to another customer ...

In the standard version, the list price for the Profihopper is 32,750 Euro plus VAT.

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Editor: MunicipalTechnology

Statement from Amazone ...

... regarding the operator console to the right hand side of the driver's seat and the switches for the mowing drive:

For the next model series we will bear in mind the suggestions. However – due to the dimensions of the machine and the seat carrier opening – an extension of the lever would also have an undesirable effect. However, we will check all possibilities to further ease the handling for the driver.

... regarding the accelerator and the degree of acceleration and braking:

We are always endeavouring to design the machine to be as comfortable as possible for the driver and we will also be checking this point.

... regarding the diesel tank volume:

We will check out the suggestion to further increase the 20 l tank and include this in our future deliberations.

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DON'T WAIT – GET STARTED!

PROFIHOPPER 4WDI



- Mowing, even in wet grass
- Scarifying in spring
- Leaf collection in autumn
- Intelligent all-wheel drive: safe on slopes
- PowerCompactor system: collecting augers pack more than a 1,000 litres of cuttings into the 730 litre hopper



AMAZONE