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The Magnificent Seven

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FENDT

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One complaint often directed at the previous 700-series tractors from Fendt was that their cab was somewhat on the snug side. Well, the German firm has certainly addressed this criticism on its latest generation 700, with more room inside and a striking windscreen that curves into the roof to not only give a greater sense of space but also aid visibility when operating a front loader.

This new line of 107kW/128hp/126PS to 162kW/220hp/217PS tractors also encompasses the old-style 800-series – and then grows a bit more. The 720, 722 and 724 are already proving popular with UK and Irish owners, and the smaller 714, 716 and 718, which were launched slightly later, are now starting to roll off the Marktoberdorf production line in greater numbers.

For this month's profi tractor test we focus on the 724, which on arrival we immediately handed over to the DLG to confirm whether its performance reality matches Fendt's brochure hype. On the dyno our test steed pushed out nearly 155kW/208hp/205PS at the shaft at rated speed, this stat increasing to more than 169kW/226hp/224PS at max output – impressive results, assisted by a torque increase of nearly 48%. And all this from the little 6.1-litre Deutz TCD6.1L6 motor, which cracks the 1,000Nm torque level at just 1,500rpm.

The good news continues when we look at fuel consumption – 243g/kWh at rated and 223g/kWh at maximum output when tested on the dyno – although you need to factor in the 20g/kWh, or thereabouts, of AdBlue

required to feed the SCR system to meet Stage IIIB engine regs.

On to the drawbar power test, where the tested 724 directed 124kW/166hp/164PS to the wheels with the engine running at rated speed and 137.5kW/184.4hp/182.1PS at maximum speed. These are creditable figures for a tractor with a CVT, and the fuel consumption rates also reflect good efficiency: 281g/kWh at rated and 265g/kWh at maximum output. Both are decent returns even when you build in the respective 25g/kWh and 21g/kWh amounts of AdBlue. For our Powermix test the 724's result of 254g/kWh is a new benchmark for this size of tractor – again, even after including the 28g/kWh of AdBlue.

Transmission/engine control remains top notch, although it would be remiss of us not to repeat our long-standing criticism of the gearbox's two travel ranges. Here the operator still has to manually shift between field and road ranges and vice versa. Countering this, Fendt says that in the near future the operator will be able to store the cruise control speeds (one for each travel range), as well as the two memorised ground speeds, by pressing and holding the respective activation key rather than entering the speed on the screen.

Our testers appreciated that they could deactivate the cruise control by pressing the driving pedal, and there's also an automatic load limit sensing feature. Of the other controls, the now smaller column-mounted shuttle has shuffled closer to the steering wheel, while the handbrake lever has relocated to the dash – although we do think at







The 6.1-litre Deutz motor delivered good performance characteristics and fuel economy, albeit with slightly higher AdBlue usage. The cooling pack is now fixed, apart from the air-con condenser. Photos: ST.



Powermix Fendt 724 Vario SCR (Stage IIIB with AdBlue)

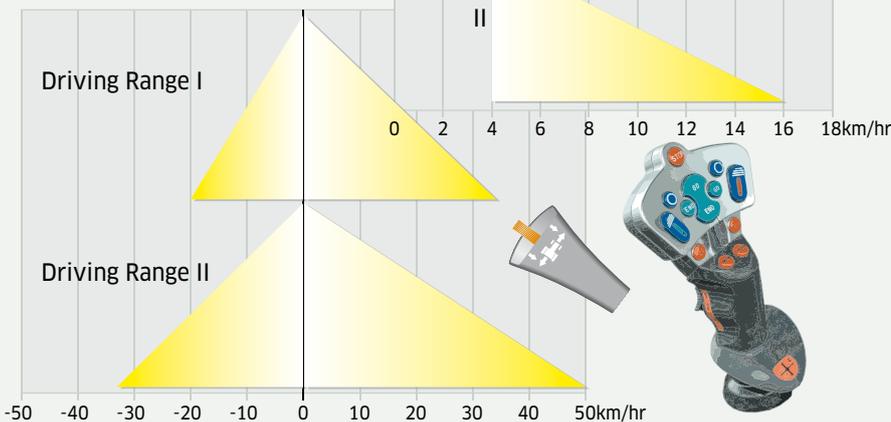
		-20%	-10%	0	+10%	+20%	0	g/kWh	50	
Draft work:		Average fuel consumption					AdBlue 29.5g/kWh and 0.88l/ha			
1 Heavy (100% load)	Plough	[Bar]					[Bar]			
	Cultivator	[Bar]					[Bar]			
2 Medium heavy (60% load)	Plough	[Bar]					[Bar]			
	Cultivator	[Bar]					[Bar]			
Pto work		Average fuel consumption					AdBlue 26.7g/kWh and 0.28l/ha			
3 Heavy (100% load)	Power harrow	[Bar]					[Bar]			
	Mower	[Bar]					[Bar]			
4 Medium heavy (70% load)	Power harrow	[Bar]					[Bar]			
	Mower	[Bar]					[Bar]			
5 Light (40% load)	Power harrow	[Bar]					[Bar]			
	Mower	[Bar]					[Bar]			
Mixed work:		Average fuel consumption					AdBlue 26.4g/kWh and 0.28l/ha			
6 Muckspreader		[Bar]					[Bar]			
7 Baler		[Bar]					[Bar]			
8 Transport ¹⁾		[Bar]					[Bar]			
Powermix 254g/kWh							28.0g/kWh			

The Powermix figure is shown at the bottom to the right and is arrived at by averaging the seven individual tests. The table shows average results for the categories draft work, pto work and mixed work, measuring fuel consumption in grams per kilowatt hour and in litres per hectare. The right graph shows the AdBlue consumption curve (AdBlue is not a fuel but is referred to as diesel exhaust fluid). The bars are narrower here, because AdBlue is less expensive than diesel. Blue bars mark the average rates. The yellow line in the left graph marks the average result obtained from all previous Powermix tests. The length of the individual bars indicates the degree to which tractor performance in this specific type of work was better than (green) or fell short of (red) the average result of all Powermix candidates to present. The average Powermix parameter, obtained from all tractors tested so far, is currently 296g/kWh. ¹⁾ Results from the transport cycle tests are not published yet. Fendt 724 Vario SCR Powermix fuel rates are significantly below the average results in all types of work. Hence, the overall Powermix result for diesel consumption is about 14% less than the average result obtained from all previous Powermix tests. The AdBlue consumption, which is in addition to fuel use, was at an average of 8.2 litres per 100 litres of diesel.

Fendt 724 Vario SCR:
Field and road ranges are selected manually. The 724 reaches its max of 50km/hr at 1,800rpm. Shuttle reverser is on the left of the steering column, and direction changes can also be made on the joystick.

Infinitely variable from 4-12km/hr

Stepless forward and backward



this premium end of the market the tractor should have an automatic park brake. Moving around to the Fendt's back-end, the pto has three speeds selected at the push of a button. Unfortunately 1,000 Eco is not yet available. Once the pto is engaged, either in the cab or via the mudguard buttons, TMS automatically increases the engine revs to the preset level. Usefully – and essential now that engine output has increased – the 724's rear linkage can hoist about 1,000kg more than its predecessors. We measured 7,000daN at the bottom and nearly 9,000daN at the top of the lift range, so there should be sufficient capacity for dealing with heavy cultivators. Nonetheless, to ensure oil flow isn't in short supply we'd recommend plumping for the £654 swash plate pump, which is rated at 152 litres/min; the standard pump, as fitted to our test tractor, could only achieve 112 litres/min and an output of 33.3kW, which is on the low side for this hp bracket. The 65 litres of hydraulic oil on offer should be more than enough, though.

Staying with oil supply, up to five double-acting spools can be specified at the rear of the tractor and two at the front, delivering a total oil flow of 100 litres/min, and there's also the option to add relief levers for easier coupling. Sadly, there are no oil leak collectors on the load-sensing couplers, and



The rear linkage, lift capacities and spool valves are all top notch. Output from the standard hydraulic pump could be better, although there is the option of a bigger pump – along with LED rear lights.

we also missed the fact that, after activating the time control, you can no longer control the spools proportionally as you move the control through the first section of the gate.

Down below, standard suspension on the 724 cab is pneumatic – there's a £502 comfort pneumatic option – and, indeed, in operation the full suspension system on our test tractor was difficult to fault. In contrast, however, there's definitely room for improvement on the tested noise level of 74.6dB(A) in the cab. Also on the options list is a right-hand door (£1,001) and opening front window, while farmers in the UK and Eire benefit from the higher spec parallel control wipers as standard, which carry out a better job of clearing that expansive and distinctive windscreen. Auto climate control lists at £424.

Previous experience shows that switching from Cat II to III is straightforward. What's new on the 700 is that you can now leave the lift arms in a raised position for increased drawbar clearance.



Still in the cab, our test tractor came with the top spec joystick and 26cm terminal, which leave little room for criticism, especially now that it's possible to program ISO-bus functions to the controls. One minor grumble is that not all of the Info+ displays give direct fingertip access to the specific menus. And while on this subject, another good feature would be separate 'warning

Further details from our field test

This is not a summary of overall assessments but a list of positive and less positive details.

Positive +

- + Has an immobiliser key as standard
- + ISObus cut-off switch is standard; battery deadman is an option



The upholstered Fendt passenger seat is comfortable and has a lap belt. The backrest can double up as a table for documents etc.



Assigning what button controls a spool or front linkage is a simple procedure.

- + Electric mirrors are an option along with wide-angle sections
- + Cable routing is beyond reproach



plus + The sockets, control box bar and cable guide on the cab post are all well laid out.

Negative -

- No sunblind on the rear window
- Poor screen dimming at night (now changed)
- Indicator has no audible alarm



minus - External spool controls should also be on the right-hand mudguard on a premium product.



minus - With an implement in residence on the rear links, access to the cab filter is restricted.



minus - Fendt sticks with a manual handbrake rather than fitting an auto park brake.



Joystick and terminal are well thought out, but the identical buttons on the armrest are difficult to navigate without looking at them.



The new cab has optional full suspension, providing excellent levels of driver comfort, and visibility from the seat is first rate, too. Not so good, the 74.6dB(A) noise levels under full load could be improved. Steering column and dash position is unlocked with a foot pedal.



Worklight controls and indicators are neatly grouped. The self-cancelling indicator has been improved, and the small shuttle control now lives closer to the steering wheel.

windows', especially for the tractor's Teach-in sequence, which would allow operators to confirm hydraulic, pto and GPS settings separately. This would avoid unpleasant surprises when pressing the 'Go/End' buttons after restoring settings on engine start-up.

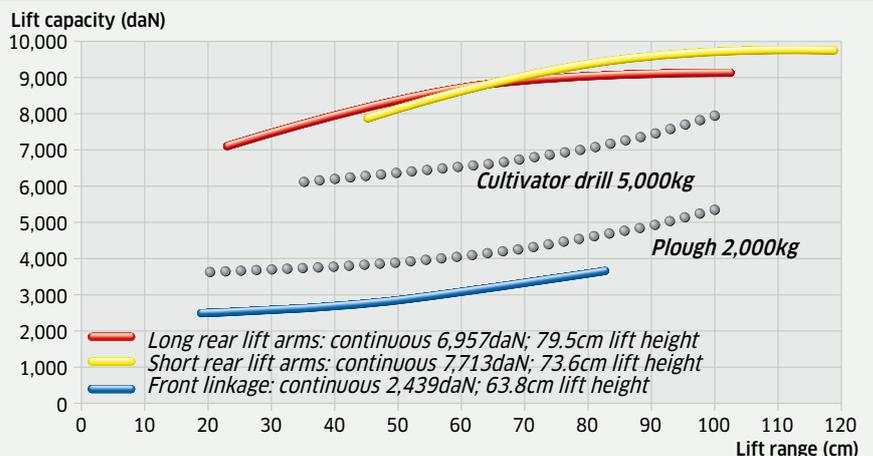
The 722 and 724 models take their front axle from the new 800 – the beam has a 500kg higher loading and 90mm (rather than 70mm) steering rams – while the 718 model and above have ten-stud flange axles and boast a 13.5t gross weight rather than 12.5t. Knock off the 7.7t kerb weight on the test spec 724 and you're left with a healthy 5.8t payload. And, not content with that,

Fendt is also planning on increasing the rear axle spec further, so even better use can be made of available payload. Brakes provide a deceleration of 4.7m/sec², with 4WD engaging when over 20km/hr. Manoeuvrability? Here's another Fendt star turn (pun intended but painful). Improved over its predecessor models, and despite being shod on 540/65 R30 front rubber with a 1.95m track width, our test 724 still managed to turn through a tight 12.40m. And further enhancing the user experience, Vari-Active steering alters the number of turns of the steering wheel relative to the ground speed – excellent for loader work.

Summary: Fuel economy continues to act as top trump for Fendt, even when you include the requirement for AdBlue. The pto, drawbar and rear linkage results were similarly impressive on our test tractor, as were the spools and their controls. Indeed the only real weakness was the 724's hydraulic output with the standard pump. As always, it's price that remains the stand-out stumbling block to Fendt ownership and access to all the above technology. For the tested 724 Vario, that retail sum amounts to an eye-watering £179,917.

HW/MN

Fendt Vario 724 SCR: Lift power and lift requirement



Fendt 724 Vario SCR: The red curve displays the recorded lift capacity (90% of maximum lift) as continuous lift power on the link ends, whereas the yellow curve shows lift capacity with lift arms shortened – more than 750daN extra lift capacity, 6cm smaller lift range. The rising line indicates that a heavy cultivator drill should not present a problem for this 220hp tractor.

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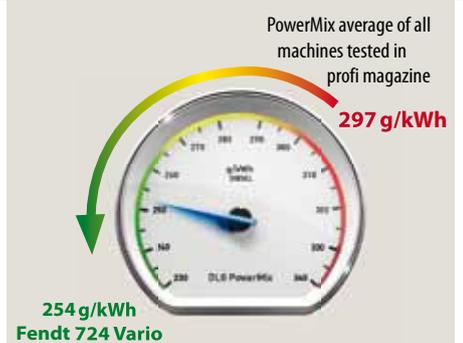
700 Vario – best in its class

Excuse us, if we keep repeating ourselves. „Best in Class“ again. The 700 Vario follows the example of the 800 und 900 Vario high-horsepower tractors, which have set new world records in the PowerMix test¹⁾. The 724 Vario now sets the record for the 166 to 240 hp power range with a diesel consumption of 254 g/kWh in the current test²⁾. Test the Fendt world champion in efficiency for yourself. Contact your dealer.



Fendt is a worldwide brand of AGCO.

Fendt Efficiency Barometer



¹⁾ Data Sheet DLG PowerMix February 2011; Data Sheet DLG PowerMix November 2011;

²⁾ Data Sheet DLG PowerMix August 2012, plus AdBlue consumption amounting to 8.2% of the diesel consumption