

Heavenly Constellation

This month VIC OLIVER road tests the Volkswagen Constellation 15.180 freight carrier chassis fitted with a 7.3 metre van body

Within a few minutes of driving this fully loaded vehicle you experience the traditional Volkswagen characteristics of a well built and functional vehicle.

The truck is easy to drive, with all controls and dash instruments well positioned, and you feel fully in control of the vehicle at all times whilst driving.

The low noise level inside the cab, together with the factory fitted air-conditioner, rear-view mirrors that can be adjusted from inside the cab, all add together to provide comfort and safety for driver and passenger. The driver and passenger doors also lock automatically when the vehicle reaches a speed of 15 km/h.

The test vehicle was fully loaded with the load well-positioned, resulting in full utilisation of the front and rear axles. The total mass of the vehicle was 14 300 kg which was just under the maximum legal allowance of



14 500 kg for this vehicle.

The test route took a course from Isando to Witbank and returned via the N12, covering a total distance of 236 km. The fuel consumption achieved was 20,23 liters per 100 km which, in my opinion, is good considering that the vehicle was loaded to its full legal capacity.

The vehicle is fitted with a five speed Eaton synchromesh gearbox. There are also two dual speed rear axle shifts which are commanded using the button next to the gearshift lever.

The 4th high and 5th low gears have the same ratio, therefore shifting from 4th high to 5th high is made without using the 5th

VW Constellation 15.180 with van body												
	Jhb - Dbn				Jhb - Cape Town				Jhb - Pretoria			
	Laden 2 ways		Laden 1 way		Laden 2 ways		Laden 1 way		Laden 2 ways		Laden 1 way	
Purchase Price (Rands)												
Chassis/cab	425100		425100		425100		425100		425100		425100	
Body	100000		100000		100000		100000		100000		100000	
Interest Rate (%)	9		9		9		9		9		9	
Payload (tons)	7.2		7.2		7.2		7.2		7.2		7.2	
Distance (km)	1139.5		1139.5		2797.2		2797.2		113.1		113.1	
Time taken (hrs:min)	17:32		16:35		38:41		38:01		2:02		1:57	
Ave Speed (km/h)	65		68.7		72.4		73.6		55.1		57.2	
Fuel Used (litres)	289.4		260.9		668.5		612.6		29.9		25.3	
Consumption (l/100 km)	25.4		22.9		23.9		21.9		26.4		22.4	
Fuel Price (R/l)	9.00		9.00		9.00		9.00		9.00		9.00	
Productivity Factor	18.5		10.0		23.9		21.9		26.4		22.4	
Ave Distance p.a. (km)	100905		116922		122345		127094		47259		61953	
Ave carried p.a. (tons)	1276		739		629		327		6051		3966	
Fixed Costs	Rands/annum		Rands/annum		Rands/annum		Rands/annum		Rands/annum		Rands/annum	
Instalments	130802		130802		130802		130802		130802		130802	
Crew	55744		55744		55744		55744		55744		55744	
Insurance	44108		44108		44108		44108		44108		44108	
Licence	5472		5472		5472		5472		5472		5472	
Overheads	26236		26236		26236		26236		26236		26236	
Total fixed costs	262362		262362		262362		262362		262362		262362	
	R/km	R/Ton	R/km	R/Ton	R/km	R/Ton	R/km	R/Ton	R/km	R/Ton	R/km	R/Ton
Total fixed costs	2.60	205.61	2.24	355.02	2.14	417.11	2.06	802.33	5.55	43.36	4.23	66.15
Variable Costs												
Fuel	2.31	182.67	2.08	329.09	2.18	424.03	1.99	773.45	2.40	18.74	2.03	31.71
Tyres	0.26	20.56	0.27	42.72	0.27	52.52	0.27	104.94	0.22	1.72	0.24	3.75
Maintenance	0.74	58.52	0.74	117.08	0.74	143.94	0.74	287.61	0.74	5.78	0.74	11.56
Toll Fees	0.54	42.70	0.54	85.44	0.19	36.96	0.18	69.96				
Total Costs	6.45	510.07	5.87	929.35	5.52	1074.54	5.24	2038.29	8.91	69.60	7.24	113.17

* Productivity = payload (tons) x average speed / fuel consumption (l/100km)

15.180 freight carrier Road test by Vic Oliver



lower gear. This means that by using the five speed gearbox together with the dual speed rear axle ratios the driver has the selection of nine forward gears. This allows the driver to select the correct gear to match the road conditions and load, resulting in better fuel consumption.

The gear selection description may sound complicated, but, once you climb behind the wheel and are driving the vehicle, you'll find that gear changing is effortless and driver-friendly.

The MWM 4.12 (Euro 3) turbocharged intercooled diesel engine fitted to the vehicle

develops 132 kW at 2200 r/min and 600 Nm of torque between 1550 and 2000 r/min.

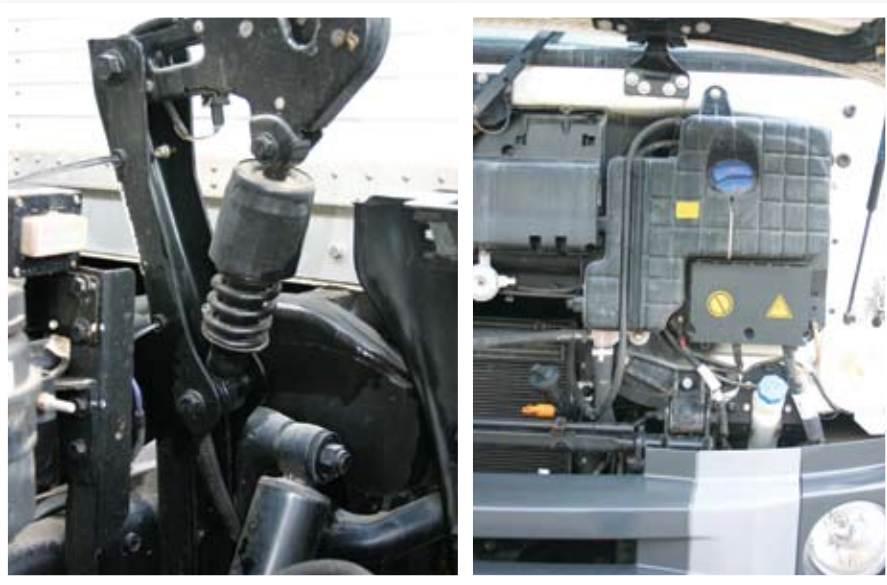
The transmission and rear axle gearing is well matched to the engine output and on the road the vehicle performed well with very little need to change gears, even on some of the gradients that are encountered on the route. The average trip speed recorded was 71 km/h which proves how well the vehicle performed considering that the maximum speed travelled was limited to 80 km/h.

Another nice feature of the vehicle is that it is fitted with an onboard computer with clear, visible display showing fuel consumption, trip information and vehicle data such as kilometres remaining until the next programmed maintenance. Should a vehicle fault occur, the computer will immediately indicate the symbol associated to the fault and will overwrite the information currently displayed.

An engine alarm and protection system is also standard equipment. The system will either warn the driver to immediately take the vehicle to the nearest Volkswagen dealer, or to stop the vehicle right away.

The cab tilt mechanism is mechanical and the pump is on the right-hand side of the vehicle. For this class of vehicle I would have expected an electric/hydraulic pump to be provided. The position of the cab tilt pump on the right-hand side of the vehicle is also a safety concern, especially in the case of a roadside breakdown; I would have preferred the pump to be fitted on the left-hand side.

The road test proved that this is a well engineered vehicle. Given the back up service that Volkswagen/MAN offer, I think that we will soon see a lot more Volkswagen heavy duty vehicles on our roads. ■



Above left: Hydraulic rear cab mountings help smooth out the ride.
Above right: Header tank, engine oil dipstick and filler and washer bottle are all easily accessible.

TransSolve 2010		Loading (Side View - Summary) VW Constellation 15.180 4x2 XLWB & van body																																							
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<p>Notes</p> <ul style="list-style-type: none"> - Included in Unladen = 275 Fuel, Not Specified = Tools, Spare Wheel, Fifth Wheel - Accessories Added = Custom Van Body - 280 kg/m - Legislation = South African Road Traffic Act <p>Warnings</p> <ul style="list-style-type: none"> - The default payload centre of gravity has been adjusted - Left versus right mass distribution is not calculated 																																									
<p>Prepared By : Fritz Hellberg Phone : 031 764 3150</p>																																									
<p>Disclaimer: The information in this report is an estimate only, the supplier of this report and the supplier of the software shall not be liable for consequential damage or loss arising from the reliance on the information supplied in this report.</p>																																									

*These graphs illustrate the vehicle's operating costs but are not based on the road test.