

# **TURBONutter**

Lada Niva 4x4  
Service Manual  
Fuel Injection

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<http://www.lada.co.uk/forum>

For Lada parts, advice and general all round Lada wonderfulness these blokes aren't bad:

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# Section I GENERAL DATA

## SPECIFICATIONS

<p>Seating capacity, driver included ... 4</p> <p>Payload, kg ..... 400</p> <p>Gross mass (fully serviced car less payload), kg ..... 1550</p> <p>Overall dimensions ..... see Fig. 1-1</p> <p>Maximum speed in top gear, km/h:</p> <p style="padding-left: 20px;">with driver and passenger ..... 132</p> <p style="padding-left: 20px;">fully laden ..... 130</p> <p>Acceleration time from rest to 100 km/h through gears, s:</p> <p style="padding-left: 20px;">with driver and passenger ..... 23</p> <p style="padding-left: 20px;">fully laden ..... 25</p> <p>Minimum turning radius, outer front wheel track, m ..... 5.5</p> <p>Maximum gradeability, fully laden, without acceleration, in 1st gear, % 58</p>	<p>Braking distance, fully laden, at 80 km/h, m ..... 40</p> <p style="text-align: center;"><u>Engine</u></p> <p>Model ..... 2121</p> <p>Type ..... four-stroke, gasoline carburettor</p> <p>Number and arrangement of cylinders . four in-line</p> <p>Bore/stroke, mm ..... 79x80</p> <p>Displacement, l ..... 1.568</p> <p>Compression ratio ..... 8.5</p> <p>Rated horsepower, kW (hp):</p> <p style="padding-left: 20px;">GOST 14846-81 (net) and ISO 1585-82 ..... 53.7(73.0)</p> <p style="padding-left: 20px;">DIN 70020 ..... 54.8(74.5)</p>
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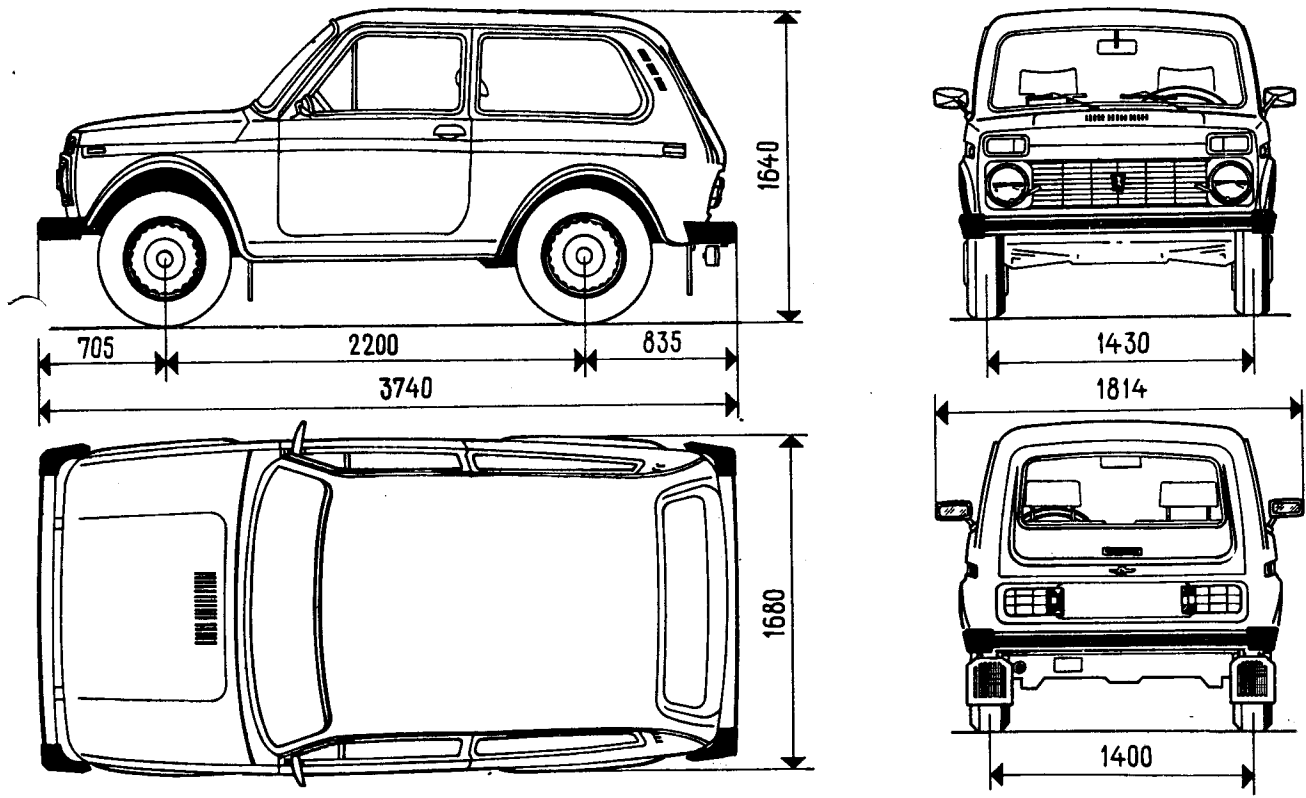


Fig. 1-1. VAZ-2121 Car. Main Overall Dimensions

Crankshaft speed at rated power,  
 $\text{min}^{-1}$  ..... 5400  
 Maximum torque, N.m (kgf.m):  
 GOST 14846-81 (net) and  
 ISO 1585-82 ..... 114(11.6)  
 DIN 70020 ..... 116(11.8)  
 Crankshaft speed at maximum torque,  
 $\text{min}^{-1}$  ..... 3400  
 Firing order ..... 1 - 3 - 4 - 2

Power Train

Clutch ..... dry, single-plate with central pressure spring  
 Gearbox ..... mechanically-operated, three sliding gears, four- or five-speed

Gear ratios:

1st gear ..... 3.67  
 2nd gear ..... 2.10  
 3rd gear ..... 1.36  
 4th gear ..... 1.00  
 5th gear ..... 0.82  
 reverse ..... 3.53

Transfer case ..... two-stage type with interaxle locking differential

gear ratios:

high speed ..... 1.2  
 low speed ..... 2.135  
 transfer case differential .... bevel gear, two-pinion type

Propeller shaft drives:

gearbox-to-transfer case ..... flexible coupling and needle bearing universal joint

transfer case-to-front-and-rear axles ..... two needle bearing universal joints and slip yokes  
 front axle-to-wheels ..... open, with constant velocity universal joints

Front and rear axle final drives ... bevel, hypoid  
 gear ratio ..... 4.1  
 differential ..... bevel, two pinion type

Running Gear

Front suspension ..... independent, lateral wish-

Rear suspension ..... rigid beam linked to body by one transverse and four longitudinal radius rods; coil springs and hydraulic telescopic shock absorbers  
 Wheels ..... disk, drop-forged  
 Rim size ..... 127J-406 (5J-16)  
 Tyres ..... radial or cross-ply, tube type  
 size ..... cross-ply - 175-16 (6.95-16) radial-ply - 175/80R16

Steering

Steering mechanism ..... hourglass worm with double roller, ratio 16.4  
 Steering linkage ..... centre rod and two symmetrical side rods, pitman arm, idler arm, knuckle arms

Brakes

Service brakes:

front ..... disc type with movable caliper  
 rear ..... drum-type with self-aligning shoes and rear brake pressure regulator

Service brake control ..... hydraulic, foot-operated, separate front and rear brake circuits, with vacuum booster  
 Brake booster ..... vacuum type, to all wheels

Parking brake ..... hand-operated, cable-controlled, to rear brake shoes

**Electrical Equipment**

Wiring system ..... single-wire, negative ground return

Rated voltage, V ..... 12

Storage battery ..... 55 Ah at 20-h discharge rate

Alternator ..... with built-in rectifier. Current output 42 A at 5000 min<sup>-1</sup> rotor speed

Starter ..... with electromagnetic solenoid switch and overrunning clutch, power 1.3 kW

Spark plugs ..... AI7DB, FM14-175/2 or FB65P, thread M14x1.25

**Body**

Model ..... 2121

Type ..... all-metal, three-door, unitized

**MAIN ADJUSTMENT AND CHECK DATA**

Valve clearances, engine cold, mm .. 0.15

Minimum crankshaft speed at idling, min<sup>-1</sup> ..... 850-900 (720-800<sup>Ⓜ</sup>)

Oil pressure in engine lubricating system, MPa (kgf/cm<sup>2</sup>) ..... 0.35-0.45 (3.5-4.5)

Initial ignition advance angle BTDC, deg ..... 5-7 (3-5<sup>Ⓜ</sup>)

Breaker point gap, mm ..... 0.4 ±0.05

Spark plug gap, mm ..... 0.5 - 0.6

Coolant temperature in warmed up engine, °C ..... 95

Coolant level in expansion tank, engine cold ..... 3-4 cm above MIN mark

Deflection of fan drive belt at 100 N (10 kgf), mm ..... 10-15

Brake fluid level in brake and clutch fluid reservoirs ..... to lower edge of filler necks

Free travel of clutch pedal, mm .... 25-35

Free travel of brake pedal, mm ..... 3-5

Steering wheel play, deg (mm) ..... 5 (18-20)

Toe-in of front wheels of laden car after running-in, measured between wheel rims, mm ..... 2-4

Camber of front wheels of laden car after running-in, deg (mm) ..... 0°30' ±20' (1-5)

Caster of front wheels on laden car after running-in ..... 3°30' ± 30'

Tyre pressure, MPa (kgf/cm<sup>2</sup>):

front wheels ..... 0.18 (1.8)

rear wheels ..... 0.17 (1.7)

Maximum gradient of dry firm ground on which fully laden car is held infinitely by parking brake with brake lever shifted through 4-5 teeth of quadrant, % ..... 30

Axial play in front wheel hub bearings, mm ..... 0.01 - 0.07

**FUELS, LUBRICANTS AND FLUIDS**

Unit	Qty, l	Material
Fuel tank (including 4-6.5 l reserve)	42	Automotive gasoline AI-93
Engine cooling system (including body heating system)	10.7	Coolant TOCOJ A-40M
Engine lubricating system (including oil filter)	3.75	Engine oil:
from -25 °C to +20 °C		M-63/10Г <sub>I</sub> , all-weather
from -30 °C to +30 °C		M-58/10Г <sub>I</sub> , all-weather
from -25 °C to +45 °C		M-63/12Г <sub>I</sub> , all-weather
Gearbox housing	1.35 <sup>Ⓜ</sup>	Transmission oil ТАД-17М
Rear axle housing	1.3	
Steering gear case	0.215	
Transfer case housing	0.75	
Front axle housing	1.5	
Clutch hydraulic system	0.2	Hydraulic brake fluid "Neva" or "Tom"
Brake hydraulic system	0.66	
Front shock absorber	0.11	Shock absorber fluid МПН-10
Rear shock absorber	0.18	
Windshield and headlight washer tanks	2.0	Mixture of water with special fluid ННМСС-4
Front wheel hub bearings		Grease ЛИТОЛ-24

<sup>Ⓜ</sup> For engines with carburettor 2106-1107010.

<sup>Ⓜ</sup> 1.55 for five-speed gearbox.

Cont'd

Unit	Qty, l	Material
Starter drive carrier ring		
Universal joint cross bearings		Grease No. 158 or ФМОЛ-2У
Propeller shaft splined joints		Grease ФМОЛ-1
Seat slides		
Door locks and striker plates		
Front wheel drive joints		Grease ШРУС-4
Steering rod joints and front suspension ball pins		Grease ШРБ-4

Cont'd

Unit	Qty, l	Material
Storage battery terminals and clamps		Aerosol petrolatum БТБ-1
Door key holes		
Hood prop		
Door checks		
Pressure regulator		Grease ДТ-1
Engine detergent oil (used when replacing lubricating oil)		Detergent oil ВНИИИИ-ФД