

Product: Piaggio Vespa GT 200 Motorcycle Service Repair Workshop Manual
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Vespa

Granturismo



WORKSHOP MANUAL

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1 Vespa GT 200

This manual has been prepared by Piaggio USA, Inc., a subsidiary of Piaggio & C. S.p.A., for use in the workshops of authorized Piaggio® dealers and sub-agents

It is assumed that the person utilizing this manual for servicing or repairing Piaggio® vehicles has a knowledge of the principles of mechanics and standard procedures required for general vehicle repair, therefore information regarding routine procedures has been deliberately omitted. Any relevant changes concerning the vehicle characteristics or specific repair operations will be divulged in the form of updates to this manual.

Satisfactory repair or service cannot be achieved without the necessary equipment and tools. Refer to the pages of this manual concerning specific tools and equipment and the special tools catalogue.



2 Characteristics

This section describes the general characteristics of the vehicle.

2.1 Various

2.1.1 Workshop Safety

For tests performed with the engine running ensure the work is carried out in a well-ventilated place and, if necessary, using appropriate extractors. Never run the engine in an enclosed space; exhaust gases are toxic.

Some types of battery use sulphuric acid as an electrolyte. Protect eyes, clothing and skin. Sulphuric acid is highly corrosive; if it comes into contact with the eyes or the skin, rinse thoroughly with water and seek immediate medical attention.

The battery produces hydrogen gas, which is extremely explosive. Do not smoke and do not allow flames or sparks near the battery, especially whilst it is being recharged.

Gasoline is extremely flammable and, under certain conditions, explosive. Do not smoke and do not allow flames or sparks in the work area.

Cleaning of brake shoes, drums and pads should be done in a well-ventilated area, aiming compressed air so as to avoid inhaling the dust produced by wear in the friction material. Even the dust from asbestos-free linings can damage the health.

2.1.2 Service Recommendations

Use genuine Piaggio® spare parts and recommended lubricants. Use of non-genuine spare parts may damage the vehicle.

For operations requiring special tools, use only those designed specifically for this engine.

Always replace seals, gaskets and split pins with new ones, during reassembly.

After removing components, clean them with a non-flammable or high flash-point solvent. Lubricate all contacting surfaces, inspect for taper fit couplings, before reassembling.

Check all components have been correctly fitted and test that they work properly after reassembly.

Use only Metric-sized tools for removing, repairing and refitting operations. Metric screw fasteners, nuts and bolts are not interchangeable or compatible with Imperial-sized fasteners. Use of Imperial-sized tools or fasteners can damage the vehicle.

For repairs that involve disconnecting the vehicle's electrics, test the connections after reassembly, especially those to ground and to the battery.

2.2 Vehicle Identification

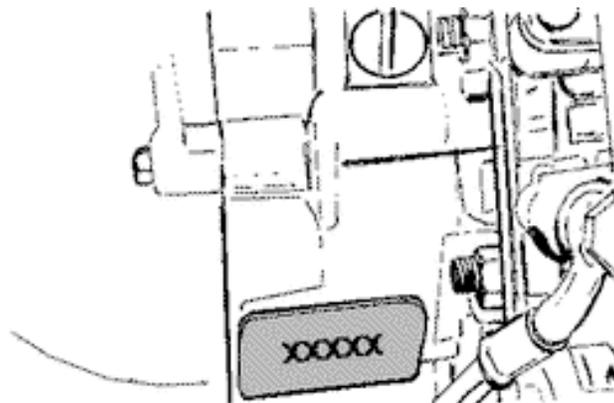
2.2.1 Frame No.

Vehicle	Frame prefix
Granturismo 200 cc	ZAPM3120000001001



2.2.2 Engine No.

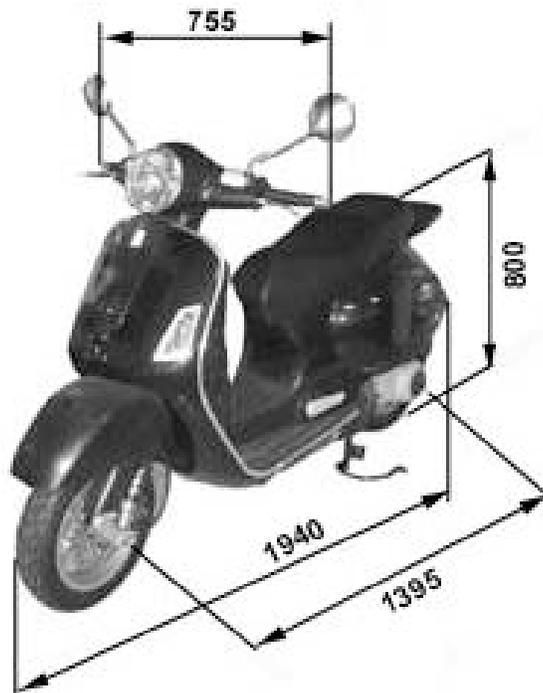
Vehicle	Engine prefix
Granturismo 200 cc	M312M1001



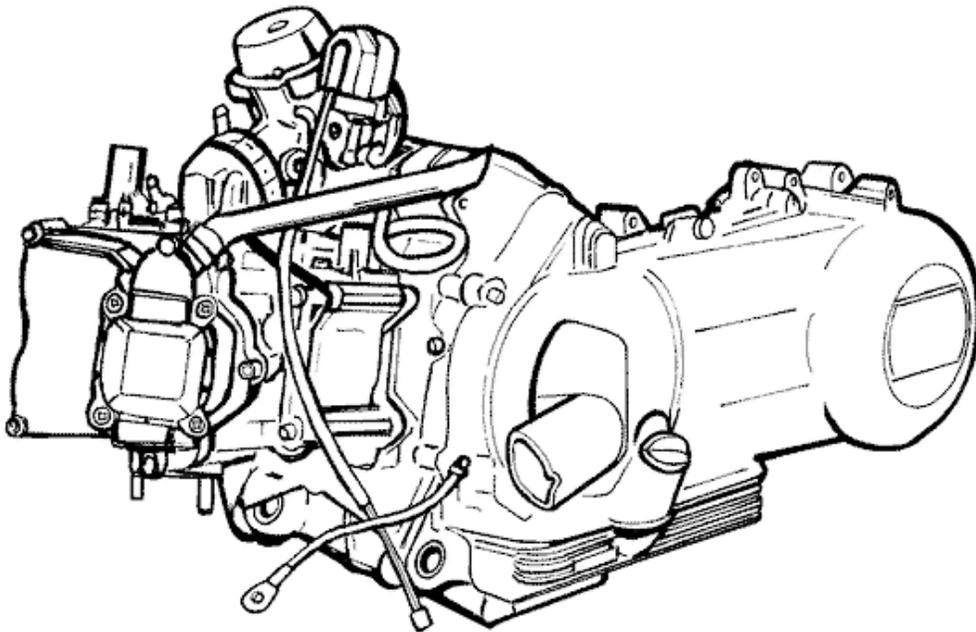
2.3 Technical Specifications

2.3.1 Weight and Dimensions

Characteristics	Descriptions
Dry weight	308 lbs. (140 Kg)
Width (at handgrips)	2.48 ft. (755 mm)
Length	6.36 ft. (1,940 mm)
Wheel base	4.58 ft. (1,395 mm)
Saddle height	2.62 ft. (800 mm)



2.4 Engine



2.4.1 General	
Characteristics	Descriptions
Type	Single-cylinder, four-stroke, four-valve, liquid-cooled
Timing system	Single overhead camshaft driven by chain on L.H., 3-arm rockers with threaded adjuster
Bore	2.83 in. (72.0 mm)
Stroke	1.91 in. (48.6 mm)
Piston displacement	12.06 cu. in. (197.775 cm ³)
Compression ratio	11-12: 1
Walbro carburetor	WVF-7P
Keihin carburetor	CVK 30
Engine idle	1650±50 rpm
CO value	3.8±0.7%
Air filter	Sponge air filter, soaked in fuel-oil mixture (50% gasoline - 50% oil)
Starter system	Electric starter motor with torque limiter

Lubrication	By chain driven lobe pump in crankcase, mesh strainer and cartridge filter
Fuel system	Gasoline supplied by carburetor with vacuum pump
Max power (shaft)	21 hp (15.4 kW) @ 8,500 rpm
Max speed	75 mph (120 km/h)
2.4.2 Walbro carburetor	
Characteristics	Descriptions
Vacuum type	WVF-7P*
Printing on body	7P
CUT-OFF device	Present
Max jet	95
Slow running jet	33
Main air jet	120
Idling air jet	55
Throttle valve spring	0.264 lbs (1.18 N)
Initial opening of idle speed mixture adjusting screw	2±½
Conical needle	495
Notches from top of conical needle	2
Diffuser nozzle	Ø 0.106 in (2.7 mm)
Fuel inlet hole	Ø 0.059 in (1.5 mm)
Starting air jet	200
Starting diffuser jet	110
Starter jet	45
Starter pin diameter	Ø 0.070 in (1.78 mm)
Starter device resistance	~40 Ω
Venturi tube	Ø 1.142 in (29.0 mm) - (30.3×27.0 mm)
Throttle valve	Ø 1.299 in (33.0 mm)
Tube maximum choke	Ø 1.890 in (48.0 mm)

2.4.3 Kehin carburetor	
Characteristics	Descriptions
Vacuum type	CVK 30
Printing on body	CVK
CUT-OFF device	present
Max jet	92
Slow running jet	38
Main air jet	70
Idling air jet	115
Throttle valve spring	0.330–0.551 lbs (1.47–2.45 N)
Initial opening of idle speed mixture adjusting screw	2¼±¼
Conical needle	NDAA
Notches from top of conical needle	Single-notch needle
Diffuser nozzle	Ø 1.969 in (5.0 mm)
Fuel inlet hole	Ø 0.059 in (1.5 mm)
Starting air jet	-
Starting diffuser jet	-
Starter jet	42
Choke pin diameter	-
Choke device resistance	~ 20 Ω
Venturi tube	Ø 1.142 in (29.0 mm) (47×30.9 mm)
Throttle valve	Ø 1.201 in (30.5 mm)
Tube maximum choke	-

*The identification letter may vary every time the carburetor is updated.

2.5 Transmission

Characteristics	Descriptions
Transmission	By automatic variator, with expanding pulleys, torque converter, V-belt, automatic clutch, gear reducer and transmission compartment cooled by forced air circulation

2.6 Capacities

Characteristics	Descriptions
Engine oil	~1.06 quarts ($\sim 1,000\text{ cm}^3$) (recommended oil: Selenia HI Scooter 4 Tech)
Fuel tank (including reserve ~ 0.5 gal)	~2.5 gallons ($\sim 9.5\text{ liters}$)
Rear hub	~0.16 quarts ($\sim 150\text{ cm}^3$) (recommended oil: TUTELA ZC 90)
Cooling system fluid	~0.55-0.57 gallons ($\sim 2.10\text{--}2.15\text{ liters}$) (recommended: PARAFU 11FE (diluted))

2.7 Electrical Components

Characteristics	Descriptions
Ignition type	Electronic ignition by capacitive discharge, with variable advance and separate H.T. coil
Variable ignition advance (before T.D.C.)	From $10^\circ \pm 1^\circ$ @ 2,000 rpm to $32^\circ \pm 1^\circ$ @ 6,500 rpm
Spark plug	Champion RG 6 YC
Battery	12V-12Ah
Fuses	1 \times 15A, 1 \times 10A, 3 \times 7.5A, 2 \times 5A
Generator	In alternating current (AC)

2.8 Frame, Suspensions, Brakes and Tires

2.8.1 Frame and Suspension	
Characteristics	Descriptions
Type	Pressed steel, mono-coque type
Front suspension	Single-arm suspension equipped with dual-effect hydraulic shock absorber with coaxial spring
Front shock absorber travel	3.4 in (86.5 mm)
Rear suspension	Engine mounted on oscillating fork pivoted to the frame by means of an arm with 2 degrees of freedom. Pair of dual effect hydraulic shock absorbers and coaxial springs with 3 preload adjustment positions
Rear shock absorber travel	3.52 in (89.5 mm)
2.8.2 Brakes	
Characteristics	Descriptions
Front	Ø 8.66 in (220 mm) disc and hydraulically operated floating caliper (via RH lever) with two Ø 0.98 in (25 mm) pistons
Rear	Ø 8.66 in (220 mm) disc and hydraulically operated floating caliper (via LH lever) with two Ø 1.18 in (30 mm) pistons
2.8.3 Wheels and Tires	
Characteristics	Descriptions
Aluminum alloy rims	Front: 3.00×12" Rear: 3.00×12"
Tires	Front: 120/70-12" Tubeless Rear: 130/70-12" Tubeless
Tire pressure (when cold):	Front: 26.1 psi (1.8 bars) Rear (rider only): 29.0 psi (2.0 bars) Rear (rider + passenger): 31.9 psi (2.2 bars)
Note: The tire inflation pressure should be checked and adjusted when the tires are at ambient temperature. Pressure should be adjusted according to the weight of the driver, accessories, and/or passenger.	

3 Tightening Torques

3.1 Steering Unit		
Component	Qty	Torque [lbs·ft (N·m)]
Steering upper ring nut	1	22.1–29.5 (30–40)
Steering lower ring nut	1	5.9–7.4 (8–10)
Handlebar clamping screw (*)	1	33.1–36.8 (45–50)
Handlebar control unit U-bolts fixing screws	2	5.1–7.4 (7–10)
3.2 Frame		
Component	Qty	Torque [lbs·ft (N·m)]
Swing arm-engine pivot nut	1	47.1–53.0 (64–72)
Swing arm-frame pivot nut	1	56.0–61.1 (76–83)
Frame –engine link nut	1	24.3–30.2 (33–41)
Silent-block support plate bolt	2	30.9–38.3 (42–52)
Center stand bolt	1	18.4–22.1 (25–30)
3.3 Front Suspension		
Component	Qty	Torque [lbs·ft (N·m)]
Shock absorber plate–caliper fixing screw	2	14.7–19.9 (20–27)
Wheel axle nut	1	55.2–66.3 (75–90)
Wheel screw	5	14.7–18.4 (20–25)
Mudguard–fork fixing screw	3	3.7–4.8 (5–6.5)

3.4 Front Brake		
Component	Qty	Torque [lbs·ft (N·m)]
Pump-oil tube connection	1	13.7-18.4 (20-25)
Caliper-oil tube connection	1	13.7-18.4 (20-25)
Caliper-shock absorber plate fixing screw	2	13.7-18.4 (20-25)
Disk clamping screw (°)	6	4.4 (6)
Oil bleeder screw	1	8.8-11.8 (12-16)
Pad clamping pin	2	13.6-18.4 (19.6-25)
Brake pump basin screw	2	9.6-13.7 (15-20)
3.5 Rear Suspension		
Component	Qty	Torque [lbs·ft (N·m)]
L.H. side shock absorber support plate-crankcase fixing screw	2	13.7-18.4 (20-25)
Shock absorber top fastening	2	13.7-18.4 (20-25)
Shock absorber bottom fastening	2	24.3-30.2 (33-41)
Rear wheel axle	1	76.5-92.6 (104-126)
Wheel-hub fixing screw	5	13.7-18.4 (20-25)
Silencer-shock absorber support arm screws on engine (*)	2	13.7-18.4 (20-25)

3.6 Rear Brake		
Component	Qty	Torque [lbs·ft (N·m)]
Pipe-oil tube connection	1	13.7–18.4 (20–25)
Caliper–oil tube connection	2	13.7–18.4 (20–25)
Rear disk clamping screw (°)	6	8.1–9.6 (11–13)
Oil bleeder screw	1	8.8–11.8 (12–16)
Caliper–engine fixing screw	2	13.7–18.4 (20–25)
Brake pump basin screw	2	11.0–14.7 (15–20)
Caliper coupling screw	2	22.1–24.3 (30–33)
3.7 Silencer		
Component	Qty	Torque [lbs·ft (N·m)]
Silencer heat shield fixing screw	4	3.7–4.4 (5–6)
Exhaust gas inlet screw	1	9.6–11.0 (13–15)
Silencer–support arm fixing screw	3	13.7–18.4 (20–25)
3.8 Hydraulic Components		
Component	Qty	Torque [lbs·ft (N·m)]
Hub oil bleeder cap	1	11.0–12.5 (15–17)
Oil filter–crankcase fixing screw	1	19.9–24.3 (27–33)
Engine oil–net filter bleeder cap	1	17.7–22.1 (24–30)

Oil filter	1	5.9–7.4 (8–10)
Oil pump cover screw	2	5.2–6.6 (7–9)
Oil pump –crankcase fixing screw	2	3.7–4.4 (5–6)
Oil pump control rim screw	1	7.4–10.3 (10–14)
Oil pump cover plate screws	2	2.9–4.4 (4–6)
Oil sump screw	7	7.4–10.3 (10–14)
Minimum oil pressure sensor	1	8.8–10.3 (12–14)

3.9 Cylinder Head

Component	Qty	Torque [lbs·ft (N·m)]
Spark plug	1	8.8–10.3 (12–14)
Head cover screw	5	4.4–5.2 (6–7)
Head-cylinder fixing nut (*) ([§])	4	5.2±0.7 +½ rotation (7±1 +180°)
Head fixing side screw	2	8.1–9.6 (11–13)
Start up mass screw	1	5.2–6.3 (7–8.5)
Adjustment tappet lock-nut	2	4.4–5.9 (6–8)
Intake manifold screw	2	8.1–9.6 (11–13)
Timing chain tightening sliding block screw	1	7.4–10.3 (10–14)
Start up mass bell screw	1	8.1–11.0 (11–15)
Timing belt tightening support screw	2	8.1–9.6 (11–13)

Timing belt tightening central screw	1	3.7-4.4 (5-6)
Camshaft retain plate screw	2	2.9-4.4 (4-6)
3.10 Transmission		
Component	Qty	Torque [lbs·ft (N·m)]
Belt support roller screw	1	8.1-9.6 (11-13)
Clutch assy. nut	1	40.5-44.2 (55-60)
Driving pulley nut	1	55.2-61.1 (75-83)
Transmission cover screw	13	8.1-9.6 (11-13)
Driven pulley axle nut	1	39.8-44.4 (54-60)
Rear hub cover screw	7	17.7-19.9 (24-27)
3.11 Flywheel		
Component	Qty	Torque [lbs·ft (N·m)]
Flywheel cover fixing screw	4	3.7-4.4 (5-6)
Stator unit screw (°)	2	2.2-2.9 (3-4)
Flywheel nut	1	38.3-42.7 (52-58)
Pick-up fixing screw	2	2.2-2.9 (3-4)
3.12 Engine Crankcase and Shaft		
Component	Qty	Torque [lbs·ft (N·m)]
Engine crankcase inside head screws (transmission side half shaft)	2	2.9-4.4 (4-6)
Engine crankcase coupling screws	11	8.1-9.6 (11-13)

Starter motor screws	2	8.1-9.6 (11-13)
Crankcase timing chain cover screw (°)	3	2.5-3.2 (3.5-4.5)
3.13 Cooling		
Component	Qty	Torque [lbs·ft (N·m)]
Water pump impeller cover	3	2.2-2.9 (3-4)
Water pump impeller driving joint screws	3	2.2-2.9 (3-4)
Thermostat cover screws	2	2.2-2.9 (3-4)