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MANUALE STAZIONE DI SERVIZIO

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MSS Nexus 300 i.e. E3 (2008)

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MSS Nexus 300 i.e. E3 (2008)

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V.le Rinaldo Piaggio, 23 - 56025 PONTEDERA (Pi)

MANUALE STAZIONE DI SERVIZIO

MSS Nexus 300 i.e. E3 (2008)

Questo manuale per stazioni di servizio è stato realizzato da Piaggio & C. Spa per essere utilizzato dalle officine dei concessionari e sub-agenzie Piaggio-Gilera. Si presuppone che chi utilizza questa pubblicazione per la manutenzione e la riparazione dei veicoli Piaggio, abbia una conoscenza base dei principi della meccanica e dei procedimenti inerenti la tecnica della riparazione dei veicoli. Le variazioni importanti nelle caratteristiche dei veicoli o nelle specifiche operazioni di riparazione verranno comunicate attraverso aggiornamenti di questo manuale. Non si può comunque realizzare un lavoro completamente soddisfacente se non si dispone degli impianti e delle attrezzature necessarie, ed è per questo che vi invitiamo a consultare le pagine di questo manuale riguardanti l'attrezzatura specifica e il catalogo degli attrezzi specifici.

N.B. Provides key information to make the procedure easier to understand and carry out.

CAUTION Refers to specific procedures to carry out for preventing damages to the vehicle.

WARNING Refers to specific procedures to carry out to prevent injuries to the repairer.



Personal safety Failure to completely observe these instructions will result in serious risk of personal injury.



Safeguarding the environment Sections marked with this symbol indicate the correct use of the vehicle to prevent damaging the environment.



Vehicle intactness The incomplete or non-observance of these regulations leads to the risk of serious damage to the vehicle and sometimes even the invalidity of the guarantee.



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INDEX OF TOPICS

CHARACTERISTICS

CHAR

This section describes the general specifications of the vehicle.

Rules

This section describes general safety rules for any maintenance operations performed on the vehicle.

Safety rules

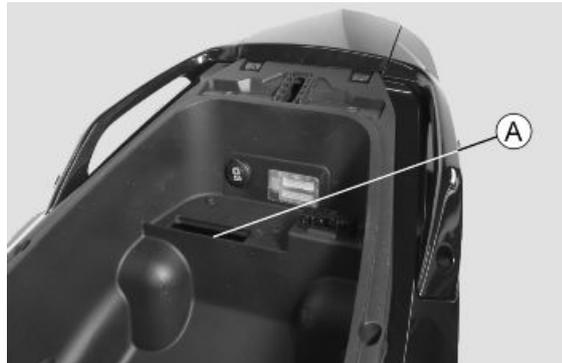
- If work can only be done on the vehicle with the engine running, make sure that the premises are well-ventilated, using special extractors if necessary; never let the engine run in an enclosed area. Exhaust fumes are toxic.
 - The battery electrolyte contains sulphuric acid. Protect your eyes, clothes and skin. Sulphuric acid is highly corrosive; in the event of contact with your eyes or skin, rinse thoroughly with abundant water and seek immediate medical attention.
 - The battery produces hydrogen, a gas that can be highly explosive. Do not smoke and avoid sparks or flames near the battery, especially when charging it.
 - Fuel is highly flammable and it can be explosive given some conditions. Do not smoke in the working area, and avoid naked flames or sparks.
 - Clean the brake pads in a well-ventilated area, directing the jet of compressed air in such a way that you do not breathe in the dust produced by the wear of the friction material. Even though the latter contains no asbestos, inhaling dust is harmful.
-

Maintenance rules

- Use original PIAGGIO spare parts and lubricants recommended by the Manufacturer. Non-original or non-conforming spares may damage the vehicle.
 - Use only the appropriate tools designed for this vehicle.
 - Always use new gaskets, sealing rings and split pins upon refitting.
 - After removal, clean the components using non-flammable or low flash-point solvents. Lubricate all the work surfaces, except tapered couplings, before refitting these parts.
 - After refitting, make sure that all the components have been installed correctly and work properly.
 - For removal, overhaul and refit operations use only tools with metric measures. Metric bolts, nuts and screws are not interchangeable with coupling members with English sizes. Using unsuitable coupling members and tools may damage the scooter.
 - When carrying out maintenance operations on the vehicle that involve the electrical system, make sure the electric connections have been made properly, particularly the ground and battery connections.
-

Vehicle identification

To read the chassis prefix, remove the lid «**A**» in the helmet compartment.



The engine prefix «**B**» is stamped near the left shock absorber lower support.



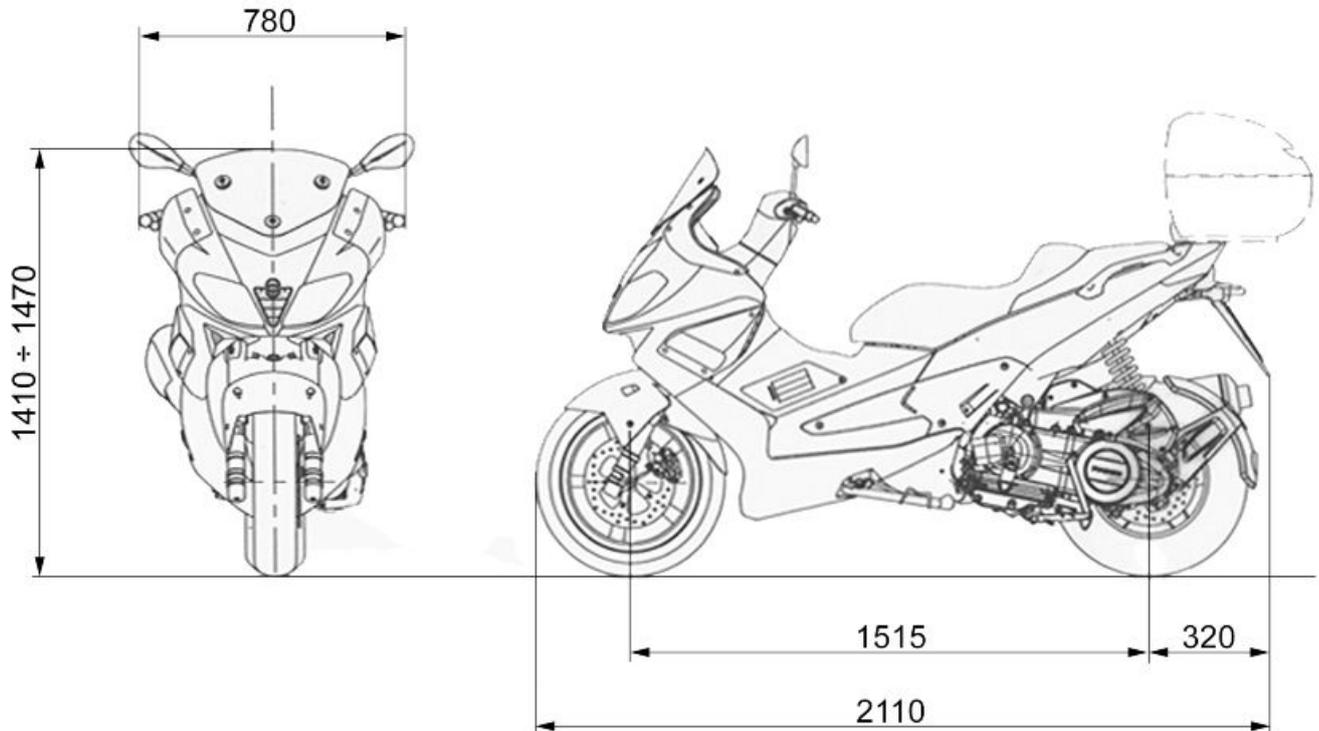
VEHICLE IDENTIFICATION

Specification	Desc./Quantity
Chassis prefix	ZAPM35600123456789
Engine prefix	M356M

Dimensions and mass

WEIGHTS AND DIMENSIONS

Specification	Desc./Quantity
Kerb weight	174 ± 5 kg
Maximum weight allowed	370 Kg



Engine

ENGINE TECHNICAL DATA

Specification	Desc./Quantity
Type	Single-cylinder, 4-stroke
Cubic capacity	278 cm ³
Bore x Stroke	75x63 mm
Compression ratio	11 ± 0.5 : 1
Idle speed	1700 ± 100 rpm
Timing system	4 valves, single overhead camshaft, chain-driven.
Valve clearance	Inlet: 0.10 mm Outlet: 0.15 mm
Max. power	16.1 kW at 7,250 rpm
Max. torque	23 Nm at 6,000 rpm
Main drive	Automatic expandable pulley variator with torque server, V-belt, automatic self-ventilating centrifugal dry clutch
Final reduction	Gear reduction unit in oil bath.
Lubrication	Engine lubrication with lobe pump (inside crankcase) controlled by a chain with double filter: mesh and paper.
Cooling	Forced-circulation coolant system.
Electric start-up	Oil-coated freewheel and torque limiter.
Ignition	Electronic inductive discharge ignition, high efficiency, with separate HV coil.
Ignition advance	α/N three-dimensional map managed by control unit
Spark plug	NGK CR8EKB
Fuel supply	Electronic injection with electric fuel pump
Fuel	Unleaded petrol (95 RON)
Exhaust muffler	absorption-type exhaust muffler with catalytic converter.
Emission regulations	EURO 3

Transmission

TRANSMISSION

Specification	Desc./Quantity
Main drive	Automatic expandable pulley variator with torque server, V-belt, automatic self-ventilating centrifugal dry clutch

Capacities

CAPACITY

Specification	Desc./Quantity
Engine oil	1.3 l
Transmission oil	250 cm ³
Cooling system fluid	~ 1.8 l
Fuel tank (reserve)	approx.15.00 l (approx. 2.80 l)

Electrical system

ELECTRICAL COMPONENTS

Specification	Desc./Quantity
Start-up	Electric
Ignition	Electronic inductive discharge ignition, high efficiency, with separate HV coil.
Ignition advance	α/N three-dimensional map managed by control unit
Spark plug	NGK CR8EKB
Battery	12V/14 Ah, sealed battery

Frame and suspensions

FRAME AND SUSPENSIONS

Specification	Desc./Quantity
Chassis	Tubular and sheet steel.
Front suspension	Hydraulic telescopic fork with Ø 35 mm stem
Rear suspension	Two double-acting shock absorbers, adjustable to four positions at preloading.

Brakes

BRAKES

Specification	Desc./Quantity
Front brake	Ø 260-mm disc brake with hydraulic control activated by handlebar right-side lever.
Rear brake	Ø 240-mm disc brake with hydraulic control activated by the handlebar left-side lever.

Wheels and tyres

WHEELS AND TYRES

Specification	Desc./Quantity
Wheel rim type	Light alloy rims.
Front tyre	Tubeless, 120/70 - 15" 56P
Rear tyre	Tubeless, 140/60 - 14" 64P
Front rim	15" x 3.00
Rear rim	14" x 3.50

TYRE PRESSURE

Specification	Desc./Quantity
Front tyre pressure (with passenger)	2.3 bar (2.3)
Rear tyre pressure (with passenger)	2.3 bar (2.5)

N.B.

CHECK AND ADJUST TYRE PRESSURE WITH TYRES AT AMBIENT TEMPERATURE. REGULATE PRESSURE ACCORDING TO THE WEIGHT OF THE RIDER AND ACCESSORIES

Tightening Torques

STEERING

Name	Torque in Nm
Steering tube upper ring nut	40 ÷ 45
Steering tube lower ring nut	14 ÷ 17
Handlebar fixing screw	50 ÷ 55
Fixing screws for handlebar control assembly U-bolts	7 ÷ 10

CHASSIS

Name	Torque in Nm
Centre stand bolt	25 ÷ 30
Centre stand bolt	32 ÷ 40
Engine and vehicle side swinging arm junction bolt	33 ÷ 41
Body shell - Swinging arm pin	76 ÷ 83
Screw fixing the silent-block support plate to the body	42 ÷ 52
Engine-swinging arm bolt	64 - 72

FRONT SUSPENSION

Name	Torque in Nm
Fork leg screw	6 ÷ 7
Front wheel axle	45 ÷ 50
Hydraulic rod fixing screw	25 ÷ 35*
Fork locking screws cap	15 ÷ 30
Stem support clamp tightening screws	20 ÷ 25

Recommended products

Loctite 243 Medium strength threadlock

Loctite 243 medium-strength threadlock

REAR SUSPENSION

Name	Torque in Nm
Upper shock absorber clamp	33 ÷ 41
Lower shock absorber clamp	33 ÷ 41
Shock absorber-crankcase attachment bracket	20 ÷ 25
Rear wheel axle	104 ÷ 126
Muffler arm clamping screws	27 ÷ 30

FRONT BRAKE

Name	Torque in Nm
Screw tightening calliper to the support	24 ÷ 27
Pad fastening pin	19.6 ÷ 24.5
Calliper support plate - fork fixing screws	41 ÷ 51
Brake disc screws	8 ÷ 10
Brake fluid pump-hose fitting	16 ÷ 20
Fixing screws for handlebar control assembly U-bolts	7 ÷ 10

Recommended products**Loctite 243 Medium strength threadlock**

Loctite 243 medium-strength threadlock

REAR BRAKE

Name	Torque in Nm
Rear brake calliper fixing screws	20 ÷ 25
Engine- calliper support plate fixing screws	48 ÷ 52
Brake disc screws	8 ÷ 10
Screw tightening calliper to the support	24 ÷ 27
Pad fastening pin	19.6 ÷ 24.5
Circuit bleed calliper fitting	12 - 16

Recommended products**Loctite 243 Medium strength threadlock**

Loctite 243 medium-strength threadlock

MUFFLER

Name	Torque in Nm
Muffler heat guard fixing screw	4 ÷ 5
Screw for fixing muffler to the support arm	20 ÷ 25
Lambda probe clamp on exhaust manifold	40 ÷ 50
Exhaust manifold-muffler joint clamp	12 ÷ 13
Manifold - muffler diaphragm tightening clamp	16 ÷ 18

LUBRICATION

Name	Torque in Nm
Hub oil drainage plug	15 ÷ 17
Oil filter on crankcase fitting	27 ÷ 33
Engine oil drainage plug/mesh filter	24 ÷ 30
Oil filter	4 ÷ 6
Oil pump cover screws	7 ÷ 9
Screws fixing oil pump to crankcase	5 - 6
Oil pump control crown screw	10 ÷ 14
Oil pump cover plate screws	4 ÷ 6
Oil sump screws	10 ÷ 14
Minimum oil pressure sensor	12 ÷ 14

CYLINDER HEAD

Name	Torque in Nm
Spark plug	12 ÷ 14
Head cover screws	6 ÷ 7
Nuts fixing head to cylinder	7±1 + 10±1 + 270°
Head fixing side screws	11 ÷ 12
Starter ground screw	7 ÷ 8.5
Tappet set screw lock nut	6 ÷ 8
Inlet manifold screws	11 ÷ 13
Timing chain tensioner slider screw	10 ÷ 14
Starter ground support screw	11 ÷ 15
Timing chain tensioner support screw	11 ÷ 13
Timing chain tensioner central screw	5 - 6

Name	Torque in Nm
Camshaft retention plate screw	4 ÷ 6

TRANSMISSION

Name	Torque in Nm
Belt support roller screw	11 ÷ 13
Clutch unit nut on driven pulley	45 ÷ 50
Drive pulley nut	75 ÷ 83
Transmission cover screws	11 ÷ 13
Driven pulley shaft nut	54 ÷ 60
Rear hub cap screws	24 ÷ 27

FLYWHEEL

Name	Torque in Nm
Flywheel cover screw	11 ÷ 13
Stator assembly screws	3 - 4 (Apply LOCTITE 242 medium-strength threadlock)
Flywheel nut	94 ÷ 102
Pick-Up clamping screws	3 ÷ 4
Screw fixing freewheel to flywheel	13 ÷ 15

CRANKCASE AND CRANKSHAFT

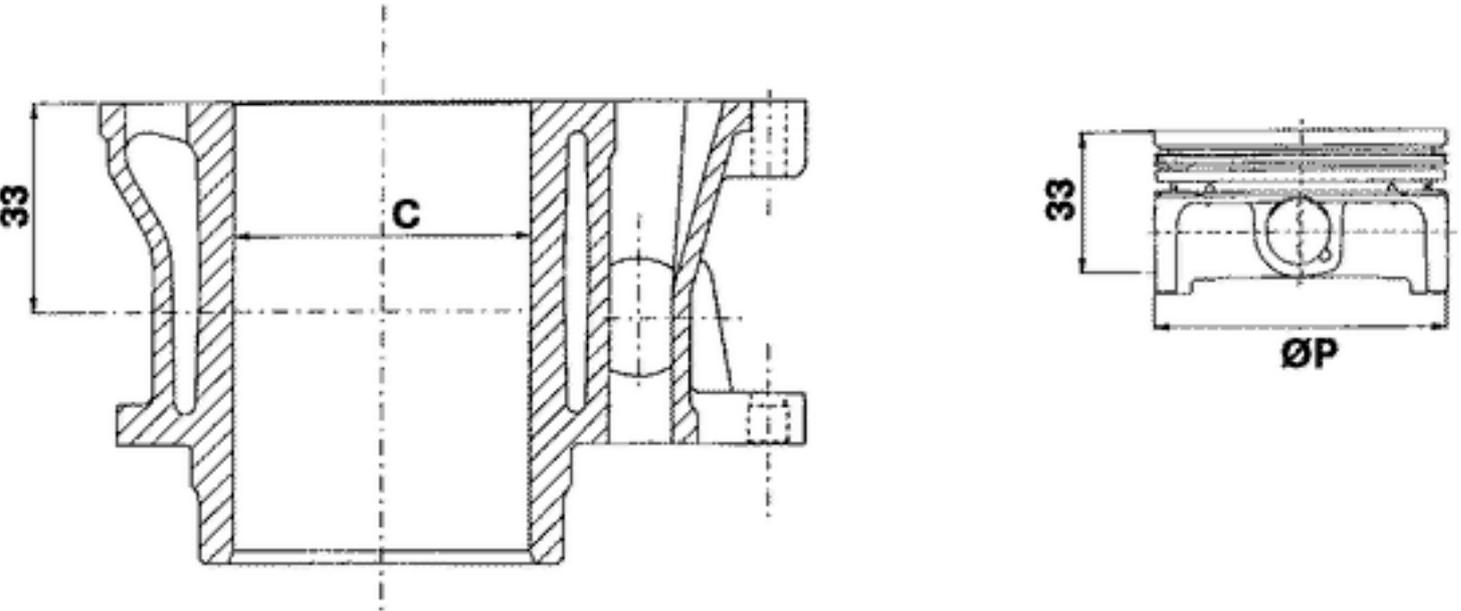
Name	Torque in Nm
Internal engine crankcase bulkhead (transmission-side half shaft) screws	4 ÷ 6
Engine-crankcase coupling screws	11 ÷ 13
Starter motor screws	11 ÷ 13
Crankcase timing cover screws	3.5 - 4.5 (Apply LOCTITE 242 medium-strength threadlock)

COOLING

Name	Torque in Nm
Water pump rotor cover	3 ÷ 4
Thermostat cover screws	3 ÷ 4
Bleed screw	3

Overhaul data**Assembly clearances**

Cylinder - piston assy.



CYLINDER - PISTON

Specification	Desc./Quantity
Plunger diameter	74.967 +0.014 -0.014 mm
Cylinder diameter	75 +0.038 +0.01 mm

COUPLING CATEGORIES

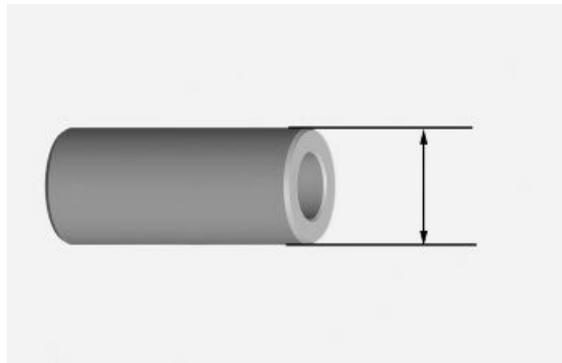
Name	Initials	Cylinder	Piston	Play on fitting
cylinder-piston	M	75.01 ÷ 75.017	74.953 ÷ 74.960	0.050 ÷ 0.064
cylinder-piston	N	75.017 ÷ 75.024	74.960 ÷ 74.967	0.050 ÷ 0.064
cylinder-piston	O	75.024 ÷ 75.031	74.967 ÷ 74.974	0.050 ÷ 0.064
cylinder-piston	P	75.031 ÷ 75.038	74.974 ÷ 74.981	0.050 ÷ 0.064

N.B.

THE PISTON MUST BE INSTALLED WITH THE ARROW FACING TOWARDS THE EXHAUST SIDE, THE PISTON RINGS MUST BE INSTALLED WITH THE WORD «TOP» OR THE STAMPED MARK FACING UPWARDS.

- Measure the outside diameter of the gudgeon pin.

Characteristic
Pin outside diameter
 16 +0 -0.004 mm

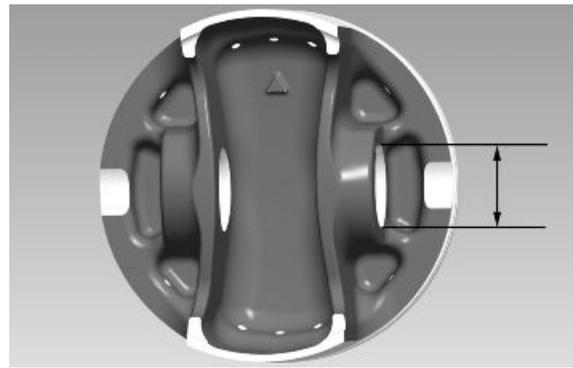


- Measure the diameter of the bearings on the piston.

Characteristic

Standard diameter

16 +0.006 +0.001 mm



- Calculate the piston pin coupling clearance.

N.B.

THE PIN HOUSINGS HAVE 2 LUBRICATION CHANNELS. FOR THIS REASON, MEASUREMENT MUST BE MADE ACCORDING TO THE PISTON AXIS.

Characteristic

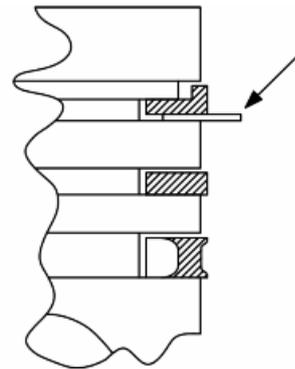
Standard clearance:

0.001 ÷ 0.010 mm

- Carefully clean the sealing ring housings.
- Measure the coupling clearance between the sealing rings and the grooves using suitable sensors, as shown in the diagram.
- If the clearance is greater than that indicated in the table, replace the piston.

N.B.

MEASURE THE CLEARANCE BY INSERTING THE BLADE OF THE FEELER THICKNESS GAUGE FROM THE SECOND SEAL SIDE.



Fitting clearance

Top piston ring - standard coupling clearance 0.015 - 0.06 mm **Top piston ring - maximum clearance allowed after use** 0.07 mm **Middle piston ring - standard coupling clearance** 0.015 - 0.06 mm **Middle piston ring - maximum clearance allowed after use** 0.07 mm **oil scraper ring - standard coupling clearance** 0.015 - 0.06 mm **oil scraper ring - maximum clearance allowed after use** 0.07 mm

- Check that the head coupling surface is not worn or misshapen.
- Pistons and cylinders are classified according to diameter. The coupling must be made with those of the same type (M-M, N-N, O-O, P-P).



Characteristic

Maximum allowable run-out:

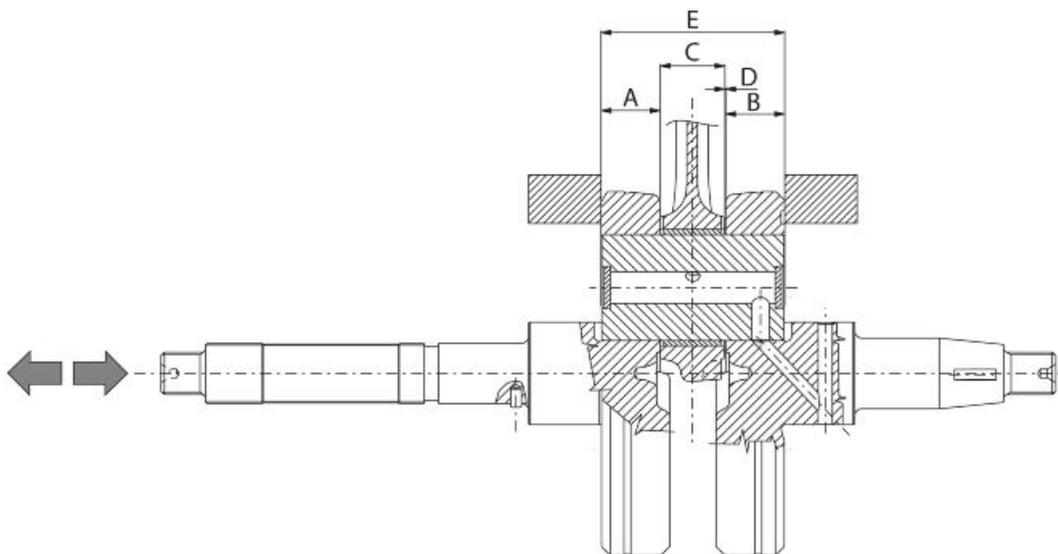
0.05 mm

Crankcase - crankshaft - connecting rod

CRANKSHAFT

Titolo	Durata/Valore	Testo Breve (< 4000 car.)	Indirizzo Immagine
Crankshaft		Crankshaft to crankcase axial clearance	

Crankshaft to crankcase axial clearance

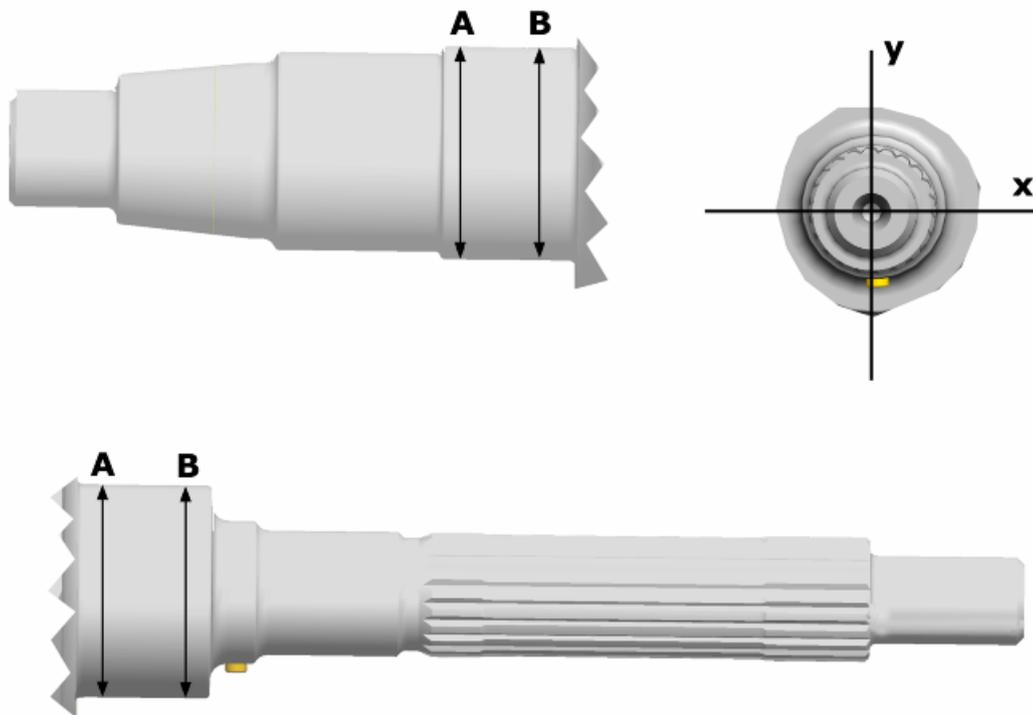


AXIAL CLEARANCE BETWEEN CRANKSHAFT AND CONNECTING ROD

Name	Description	Dimensions	Initials	Quantity
Half-shaft, transmission side		16.6 +0-0.05	A	D = 0.20 - 0.50
Flywheel-side half-shaft		16.6 +0-0.05	B	D = 0.20 - 0.50
Connecting rod		18 -0.10 -0.15	C	D = 0.20 - 0.50
Spacer tool		51.4 +0.05	E	D = 0.20 - 0.50

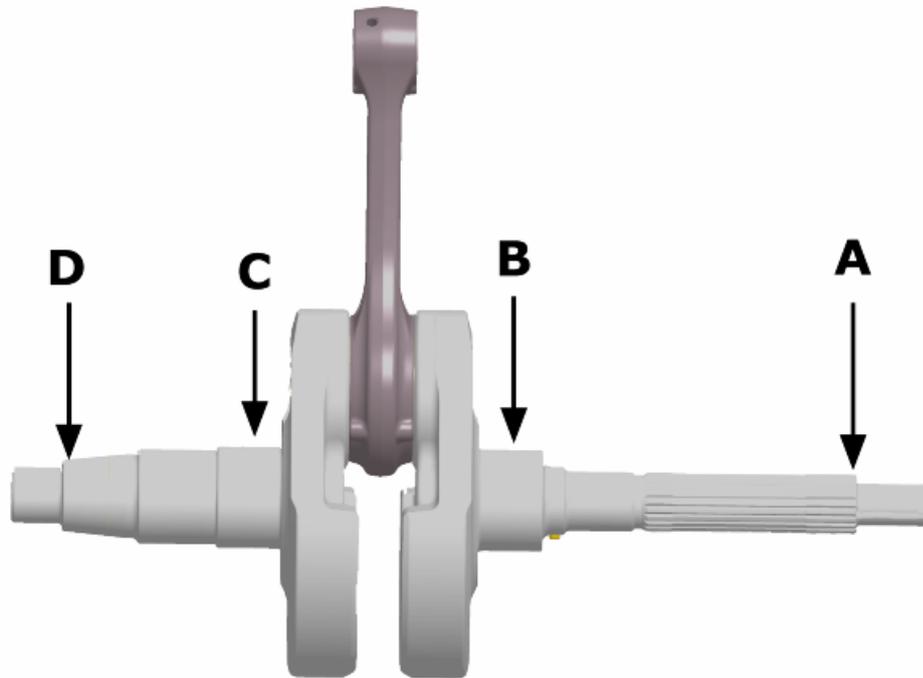
Diameter of crankshaft bearings.

Measure the bearings on both axes x-y.



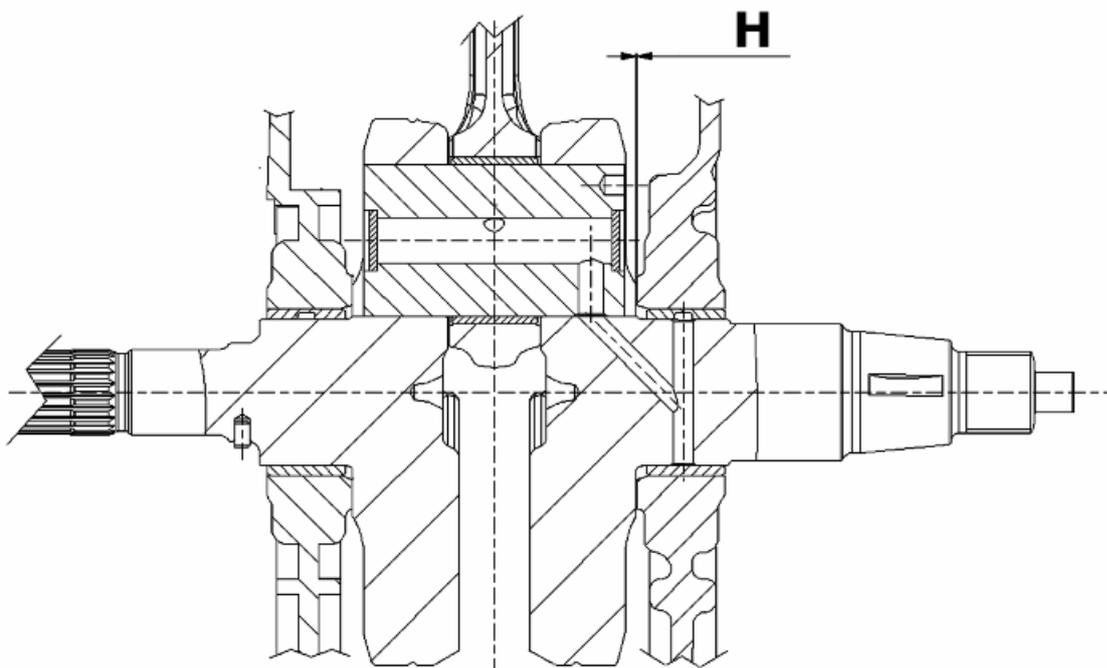
CRANKSHAFT

Specification	Desc./Quantity
Crankshaft bearings: Standard diameter: Cat. 1	28.998 ÷ 29.004 mm
Crankshaft bearings: Standard diameter: Cat. 2	29.004 ÷ 29.010 mm



MAX. ADMISSIBLE DISPLACEMENT

Specification	Desc./Quantity
A =	0.15 mm
B =	0.010 mm
C =	0.010 mm
D =	0.10 mm



Characteristic

Crankshaft-crankcase axial clearance (H)

0.15 ÷ 0.43 mm

- Using a bore gauge, measure the connecting rod small end diameter.

N.B.

IF THE CONNECTING ROD SMALL END DIAMETER EXCEEDS THE STANDARD DIAMETER, EXHIBITS WEAR OR OVERHEATING, PROCEED TO REPLACE THE CRANKSHAFT AS DESCRIBED IN THE CRANKCASE AND CRANKSHAFT CHAPTER.



Characteristic

Standard diameter

16 +0.025 +0.015 mm

- To obtain a good bushing lubrication it is necessary to have both an optimal lubricating pressure and a good oil flow rate; the bushings must be correctly positioned so as not to obstruct the oil supply channels.
- The main bushings are comprised of two half-bearings, one with holes and channels for lubrication whereas the other is solid.
- The solid half-bearing is intended to stand the thrusts caused by combustion, and for this reason it is arranged opposite the cylinder.
- To prevent obstructions in the oil feeding channels, the matching surface of the two half-bearings must be perfectly perpendicular to the cylinder axis, as shown in the figure.
- The oil feeding channel section is also affected by the bushings driving depth compared with the crankshaft axial clearance of the limiting surface.
- Check the inside diameter of the main bushings in the three directions indicated in the diagram.
- Repeat the measurements for the other bushing half. see diagram.
- There are three crankcase versions: with BLUE bushings, with YELLOW bushings and with GREEN bushings.
- There is only one type of main bushing housing hole in the crankcase. The standard bushing diameter after driving is variable on the basis of a coupling selection.
- The bushing housings in the crankcase are classified into 2 categories - Cat. 1 and Cat. 2 - just like those for the crankshaft.
- The main bushings are available in three thickness categories, identified by colour markings, as shown in the table below.

BUSHINGS

TYPE	IDENTIFICATION	CRANKSHAFT HALF-BEARING
B	BLUE	1.973 ÷ 1.976
C	YELLOW	1.976 ÷ 1.979
E	GREEN	1.979 ÷ 1.982

COUPLINGS

BUSHING CATEGORY	CRANKCASE HALVES CATEGORY	BUSHING INSIDE DIAMETER AFTER FITTING
B	2	29.024 ÷ 29.054
C	1	29.024 ÷ 29.054
	2	29.018 ÷ 29.048
E	1	29.018 ÷ 29.048

Combine the shaft with two category 1 crankwebs with the category 1 crankcase (or cat. 2 with cat. 2). Furthermore a spare crankcase cannot be matched with a crankshaft with mixed categories. The spare crankshaft has half-shafts of the same category.

CATEGORIES

CRANKCASE HALVES	ENGINE HALF-SHAFT	BUSHING
Cat. 1	Cat. 1	E
Cat. 2	Cat. 2	B
Cat. 1	Cat. 2	C
Cat. 2	Cat. 1	C

N.B.

DO NOT TAKE THE MEASUREMENT ON THE TWO HALF-SHELL COUPLING SURFACE SINCE THE ENDS ARE RELIEVED TO ALLOW BENDING DURING THE DRIVING OPERATION.

N.B.

CRANKCASES FOR REPLACEMENTS ARE SELECTED WITH CRANKCASE HALVES OF THE SAME CATEGORY AND ARE FITTED WITH CATEGORY C BUSHINGS (YELLOW)

Characteristic

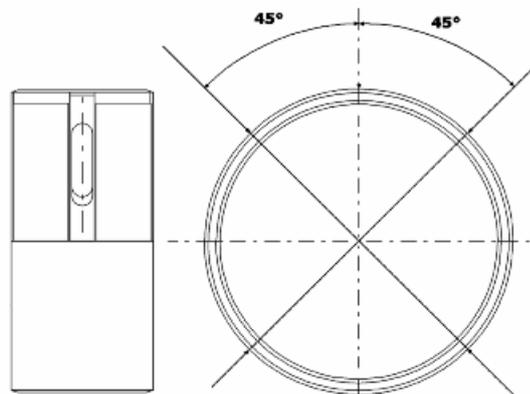
Crankshaft-bushing maximum clearance admitted:

0.08 mm

Diameter of crankcase without bushing

CAT. 1: 32.959 ÷ 32.965 mm

CAT. 2: 32.953 ÷ 32.959 mm



Cylinder Head

Before performing head service operations, thoroughly clean all coupling surfaces. Note the position of the springs and the valves so as not to change the original position during refitting

- Using a trued bar and a feeler thickness gauge check that the cylinder head surface is not worn or distorted.

Characteristic

Maximum allowable run-out:

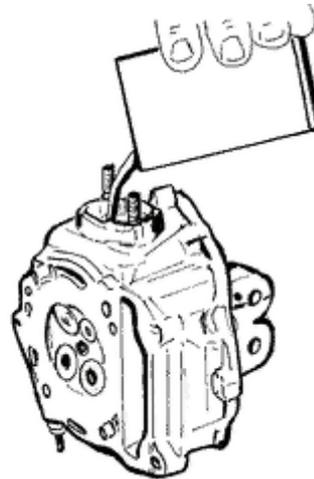
0.1 mm



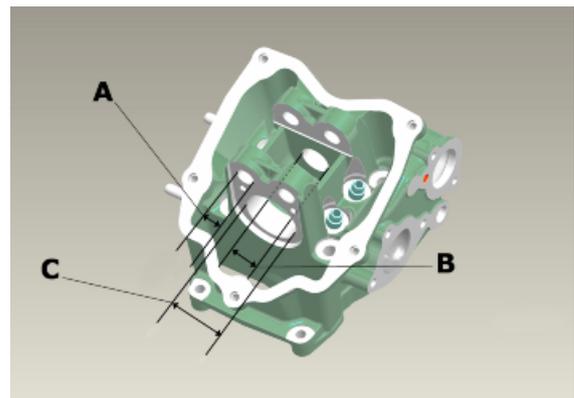
- In case of irregularities, replace the head.

- Check the sealing surfaces for the intake and exhaust manifold.
- Check that the bearings of the camshaft and the rocker pins exhibit no wear.
- Check that the head cover surface is not worn.
- Check that the coolant sealing pad exhibits no oxidation.

- Insert the valves into the cylinder head.
- Alternatively check the intake and exhaust valves.
- The test is carried out by filling the manifold with petrol and checking that the head does not ooze through the valves when these are just pressed with the fingers.



Measure the camshaft bearing seats and rocking lever support pins with a bore meter



HEAD BEARINGS

Specification	Desc./Quantity
bearing «A»	Ø 12.000 - 12.018 mm
bearing «B»	Ø 20.000 ÷ 20.021 mm
bearing «C»	Ø 37.000 - 37.025 mm

Measure the unloaded spring length

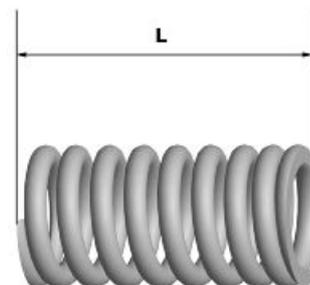
Characteristic

Standard length

40.2 mm

Allowable limit after use:

38.2 mm



- Clean the valve seats of any carbon residues.
- Using the Prussian blue, check the width of the impression on the valve seat "V".

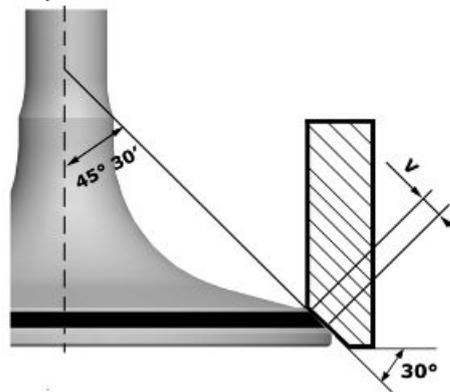
Characteristic

Standard value:

1 - 1.3 mm

Admissible limit:

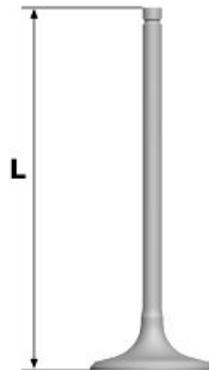
1.6 mm



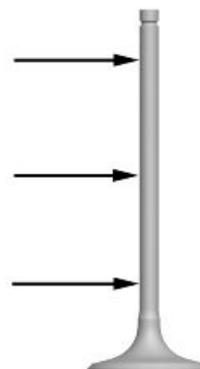
- If the impression width on the valve seat is larger than the prescribed limits, true the seats with a 45° mill and then grind.
- In case of excessive wear or damages, replace the head.

STANDARD VALVE LENGTH

Specification	Desc./Quantity
Valve check standard length	Inlet: 94.6 mm
Valve check standard length	Outlet: 94.4 mm



- Measure the diameter of the valve stems in the three positions indicated in the diagram.



STANDARD DIAMETER

Specification	Desc./Quantity
Inlet:	4.987 - 4.972 mm
Outlet:	4.975 - 4.960 mm

MINIMUM ADMISSIBLE DIAMETER

Specification	Desc./Quantity
Inlet:	4.96 mm
Outlet:	4.945 mm

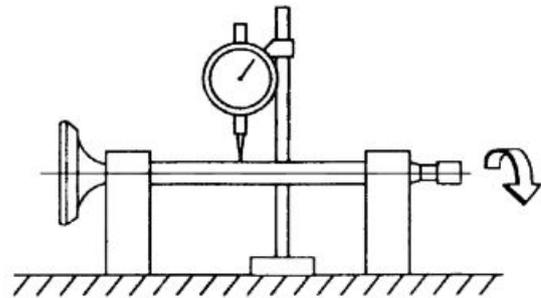
- Calculate the clearance between valve and valve guide.

- Check the deviation of the valve stem by resting it on a "V" shaped abutment and measuring the extent of the deformation with a comparator.

Characteristic

Limit values admitted:

0.1 mm

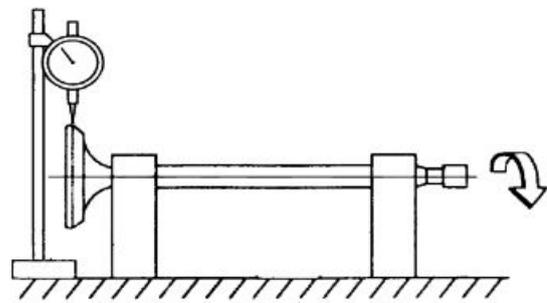


- Check the concentricity of the valve head by arranging a comparator at right angle relative to the valve head and rotate it on a "V" shaped abutment.

Characteristic

Admissible limit:

0.03 mm

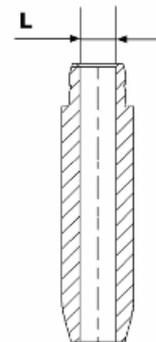


Measure the valve guide.

Characteristic

Valve guide:

5 +0.012 mm



- After measuring the valve guide diameter and the valve stem diameter, check the clearance between guide and stem.



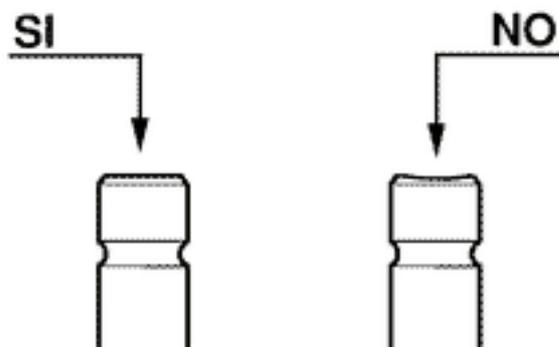
INLET

Specification	Desc./Quantity
Standard clearance:	0.013 - 0.04 mm
Admissible limit:	0.08 mm

OUTLET

Specification	Desc./Quantity
Standard clearance:	0.025 ÷ 0.052 mm
Admissible limit:	0.09 mm

- Check that there are no signs of wear on the surface of contact with the articulated register terminal.



- If the checks above give no failures, you can use the same valves. To obtain better sealing performance, grind the valve seats. Grind the valves gently with a fine-grained lapping compound. During the grinding, keep the cylinder head with the valve axes in a horizontal position. This will prevent the lapping compound residues from penetrating between the valve stem and the guide (see figure).



CAUTION

TO AVOID SCORING THE FAYING SURFACE, DO NOT KEEP ROTATING THE VALVE WHEN NO LAPPING COMPOUND IS LEFT. CAREFULLY WASH THE CYLINDER HEAD AND THE VALVES WITH A SUITABLE PRODUCT FOR THE TYPE OF LAPPING COMPOUND BEING USED.

CAUTION

DO NOT REVERSE THE FITTING POSITIONS OF THE VALVES (RIGHT - LEFT).

- Check that the camshaft bearings exhibit no scores or abnormal wear.
- Using a micrometer, measure the camshaft bearings.

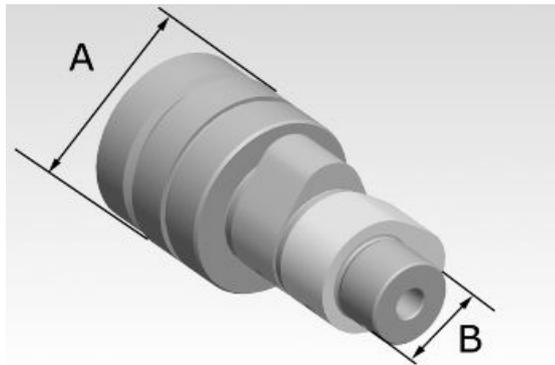
STANDARD DIAMETER

Specification	Desc./Quantity
Cam shaft check: Standard diameter	Bearing A Ø: 36.95 ÷ 36.975 mm
Cam shaft check: Standard diameter	Bearing B diameter: 19.959 ÷ 19.98 mm

MINIMUM DIAMETER PERMITTED

Specification	Desc./Quantity
Cam shaft check: Minimum admissible diameter	Bearing A Ø: 36.94 mm

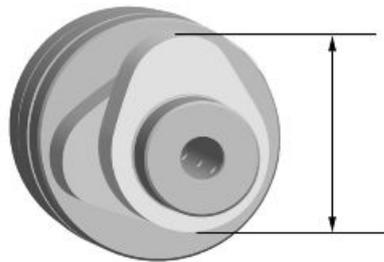
Specification	Desc./Quantity
Cam shaft check: Minimum admissible diameter	Bearing B diameter: 19.950 mm



-Using a gauge, measure the cam height.

STANDARD HEIGHT

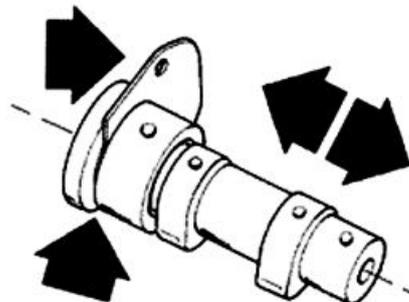
Specification	Desc./Quantity
Cam shaft check: Standard height	Inlet: 30.285 mm
Cam shaft check: Standard height	Outlet: 29.209 mm



Check the axial clearance of the camshaft

CAMSHAFT AXIAL CLEARANCE

Specification	Desc./Quantity
Cam shaft check: Standard axial clearance:	0.11 - 0.41 mm
Cam shaft check: Maximum admissible axial clearance	0.42 mm



- Measure the outside diameter of the rocking lever pins
- Check the rocking lever pins do not show signs of wear or scoring.
- Measure the inside diameter of each rocking lever.

Check there are no signs of wear on the pad from contact with the cam and on the jointed adjustment plate.

ROCKING LEVERS AND PIN DIAMETER:

Specification	Desc./Quantity
Internal rocker arm diameter: Standard diameter	Diameter 12.000 - 12.011 mm
Rocking lever pin diameter: Standard diameter	Diameter 11.977 - 11.985 mm

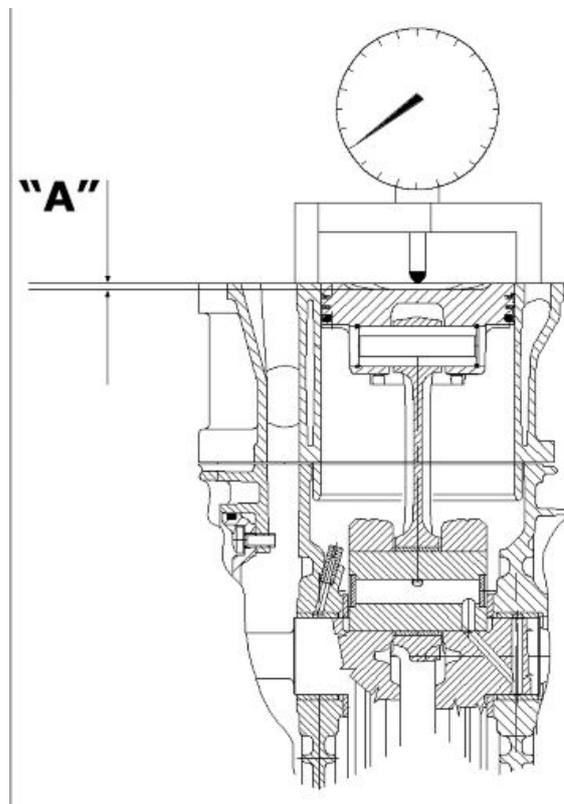


Slot packing system

Characteristic

Compression ratio

10.5 ÷ 11.5 : 1



Measurement "A" to be taken is a value of piston re-entry, it indicates by how much the plane formed by the piston crown falls below the plane formed by the top of the cylinder. The further the piston falls

inside the cylinder, the less the base gasket to be applied (to recover the compression ratio) and vice versa.

N.B.

MEASUREMENT "A" MUST BE TAKEN WITHOUT ANY GASKET FITTED BETWEEN THE CRANK-CASE AND CYLINDER AND AFTER RESETTING THE GAUGE, EQUIPPED WITH A SUPPORT, ON A GROUND PLANE

ENGINE 300 SHIMMING

Name	Measure A	Thickness
shimming	3.70 - 3.60	0.4 ± 0.05
shimming	3.60 - 3.40	0.6 ± 0.05
shimming	3.40 - 3.30	0.8 ± 0.05

Products**RECOMMENDED PRODUCTS TABLE**

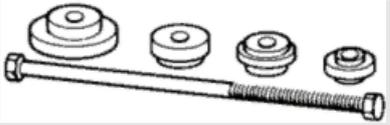
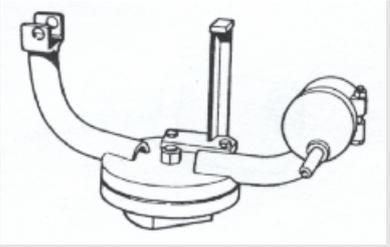
Product	Description	Specifications
AGIP GEAR 80W-90	Oil for speed gearbox	SAE 80W-90, API GL-4 mineral multi-grade oil
AGIP CITY HI TEC 4T	Oil to lubricate flexible transmissions (throttle control)	Oil for 4-stroke engines
AGIP GP 330	Grease for brake levers, throttle	White calcium complex soap-based spray grease with NLGI 2; ISO-L-XBCIB2
AGIP CITY HI TEC 4T	Engine oil	SAE 5W-40, API SL, ACEA A3, JASO MA Synthetic oil
AGIP BRAKE 4	Brake fluid	FMVSS DOT 4 Synthetic fluid
AGIP PERMANENT SPEZIAL	coolant	Monoethylene glycol-based antifreeze fluid, CUNA NC 956-16
AUTOSOL METAL POLISH	Muffler cleaning paste	special product for cleaning and polishing stainless steel muffler
AGIP GREASE PV2	Grease for the steering bearings, pin seats and swinging arm	Soap-based lithium and zinc oxide grease containing NLGI 2; ISO-L-XBCIB2 of the swinging arm
AGIP GREASE SM 2	Grease for the tone wheel revolving ring	Soap-based lithium grease containing NLGI 2 Molybdenum disulphide; ISO-L-XBCHB2, DIN KF2K-20

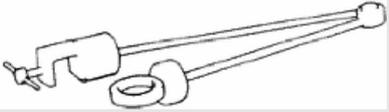
INDEX OF TOPICS

TOOLING

TOOL

SPECIFIC TOOLS

Stores code	Description	
001330Y	Tool for fitting steering seats	
001467Y014	Pliers to extract ø 15-mm bearings	
005095Y	Engine support	
002465Y	Pliers for circlips	
020459Y	Punch for fitting bearing on steering tube	
020004Y	Punch for removing fifth wheels from headstock	
020055Y	Wrench for steering tube ring nut	

Stores code	Description	
020074Y	Support base for checking crankshaft alignment	
020150Y	Air heater support	
020151Y	Air heater	
020193Y	Oil pressure gauge	
020262Y	Crankcase splitting strip	
020263Y	Sheath for driven pulley fitting	