



MANUAL DE INSTRUCCIONES

OWNER'S BOOK

MANUEL D'ENTRETIEN

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Permanyer S.A. - Motocicletas Montesa

c/ Electricidad, s/n

ESPLUGAS DE LLOBREGAT (Barcelona) ESPAÑA

TO ALL MONTESA AGENTS

Instructions for the use of this Catalogue.

It is our hope that this Catalogue will help you effectively and will ease the mechanical routine of making orders for spare parts.

To keep this Catalogue in its positive helpful way it is very important to add all the eventual alterations which we shall send to you on our further "MODIFICATION SHEETS", with different numeration for each group.

These "MODIFICATION SHEETS" will reproduce the picture of the Group involved in which all the altered pieces will be underlined, showing at the same time the Motorcycle Number that the aforesaid alteration starts from, and also the number that will show the Motorcycle from which this parts can be used as a spare.

The right placing of these "MODIFICATION SHEETS" is over the same sheet that they do modify.

We shall send one "MODIFICATION SHEETS" for every Catalogue supplied but we can send you more on request, in order to maintain up to date all the Catalogue in the hands of your dealers.

Permanyer, S.A.
MONTESA Motorcycles

INTRODUCTORY
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The MONTESA motorcycle which model is introduced here do not require an excessive care for maintenance, only a minimum attention is required to insure a long and perfect serviceable time.

With the present Manual we intend to guide you about this minimum care and at the same time make a disclosure of some technical features of your vehicle which undoubtedly would be of utmost interest.

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NOTE: The instructions and technical data given in this manual should be understood only on a description basis and right is reserved for alteration of some machine parts during their validity period.

CAPPRA 250 MX : MODEL

INTRODUCTION

The two-stroke monocylinder engine measures 247'69 cc with a bore of 72'5 mm. and stroke of 60 mm. Its brake power is 35 HP at 7.000 rpm., and ignition is made through a flywheel electronic magneto-alternator.

The engine is seated over a frame fabricated with steel pipes (Cr-Mo) electrically bended and welded, and forming an assembly of great strenght, stout and perfect handling.

The front suspension is of the telescopic fork type and the rear one of swinging arms over elastic bushes which do not require any lubrication, with double effect hydraulical dampers of adjustable starting charge.

The carburetor (AMAL) has a diameter of 32 mm. and takes air - through a paper air filter easily accesible.

The gearbox is of 5 speeds in "cascade" and constant take-up pinions, which coupled to the steel multiple disk clutch in oil bath and regular tension springs, makes an assembly of great smoothness and high performance.

The brakes are of internal expansion (180 mm. diameter rear; - 130 mm. diameter front) anchored by means of reaction bars.

The sprocket wheel on rear hub is mounted over elastic bushes fully insulated from the heat generated in the brake assembly.

"CAPRA 250-MX" Model

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INTRODUCTION

The two-stroke monocylinder engine measures 247'69 cc. with a bore of - 72'5 mm. and stroke of 60 mm. its brake power is 34 HP at 6.500 rpm., - and ignition is made through a flywheel magneto-alternator.

The engine is seated over a frame fabricated with steel pipes, mutual - and electrically bonded and welded, and finally forming an assembly of great strenght, stout and perfect handling.

The front suspension is of the telescopic fork type and the rear one of swinging arms over clastic bushes which do not require any lubrication with double effect hydraulical dampors of adjustable starting charge.

The carburetor (AMAL) has a diameter of 32 mm. and takes air through a paper air filter located under the seat and easily accesible.

The gearbox is of 5 speeds in "cascade" and constant take-up pinions, - which coupled to the steel multiple disk clutch in oil bath and regular tension springs, makes an assembly of great smoothness and high performance.

The brakes are of internal expansion (180 mm. diameter rear; 130 mm. - diameter front) anchored by means of reaction bars.

The driven toothed gear of the rear wheel is mounted over clastic bushes fully insulated from the heat generated in the brake assembly.

RECOMENDATIONS FOR USE =====

PRECAUTIONS DURING RUNNING-IN.— To obtain the proper adjustment of the movable parts of the new engine, it is advisable to make a running-in of two hours minimum.

During this running-in, two points should be noted:

- Check carburetion is rich rather excessive, lifting one point the carburetor needle or if needed, replace the main jet. Location - climate and height have an influence on this.
- Do not accelerate excessively; the gas handle should turn up to - 3/4 maximum of its travel at any of the speeds.

We considerer very neccessary to emphasize that these instructions should be fulfilled as otherwise the cylinder piston might be fretted because of the factory close tolerances needed to obtain a good performance of the engine during a prolonged time.

FUELS

Benzol as fuel should not be used as the engine is equipped with syntetyc rubber parts.

For engine lubrication, "Bardahl-V.B.A." oil should be added to the fuel at the rate of 4% i.e. 200 cc. of oil for every 5 litres of petrol.

LUBRICATION

Engine	1 : 25 petroil mixture "Bardahl V.B.A".
Clutch and primary drive	SAE 20 - 300 cc. (fl.oz:10(USA)-10½ (GB)
renewal	every 2 or 3 short races (european scrambles type) or similar
Gear box	SAE 40 - 330 cc. (fl.oz:11(USA)-11½ (GB)
renewal	every 2 or 3 short races (european scrambles type) or similar
Front suspension	SAE 20 - 190 cc. per leg (fl.oz:6½(USA)-6 3/4(GB)
renewal	at discretion

SPARK PLUGS

- Features -	For racing	For training
Bosch thermic. grade	300 ÷ 310	270 ÷ 290
Electrode gap	0,40 mm.	0,40 mm.
Thread	14 mm. x 1/2"	14 mm. x 1/2"

RECOMMENDED TYPES

Bosch	W 310 T16	W-290 T16
Lodge	R-47	
Champion	L-57 R	L-60R
K.L.G.	F-280	F-260

IGNITION

Alternator flywheel	"MOTOPLAT" 9600552
Conversor.	"MOTOPLAT" 9620005
Spark advance at t.d.c.	3 mm. (23° on flywheel)

CARBURETOR

Make	AMAL
Type	359-B/32
Diameter	32
Main Jet	280 (290-300)
Low Speed jet	40
Gas valve	3,5
Sprayer	106-A
Sprayer pipe	L Type
Needle	DA

This adjustment is susceptible to change according to weather conditions.

TYRE PRESSURE

Front wheel, dry ground . . .	0,9 atm. (13 lbs/qs. in.)
Rear wheel, dry ground . . .	0,8 atm. (11 lbs/qs. in.)
Front wheel, muddy or soft ground	0,7 atm. (10 lbs/qs. in.)
Rear wheel, muddy or soft ground	0,6 atm. (8,5 lbs/qs. in.)

ENGINE

Minimum diametral clearance - between piston and cylinder .	0,075 mm. (0,0030 in.)
Tightening torque of the cylinder lock nuts	1,5 to 2 m. Kgs. (11 to 15 ft. lbs.)
Tightening torque of the cylinder head lock nuts	3 to 3,5 m. Kgs. (22 to 25,5 ft. lbs.)
Maximum whipping, crankshaft ends mounted on the crankcase	0,03 mm. (0,0012 in.)

SPARE PARTS

To assure the perfect performance of all the different motorcycle elements, remember that replacements should always be made with the CAPRA 250-MX model original parts.

When ordering spare parts, specify always:

- a) - Part item as described in the Catalogue
- b) - Motorcycle number marked over the crankcase and frame.

OTHER IMPORTANT RECOMMENDATIONS

- Before a training or speed contest is made, the engine should be warmed up with a running-in at slow speed and high gear during an approximate period of 5 minutes, stopping the engine afterwards for another 5 to 10 minutes before starting.
- Every 2 or 3 speed contests change the clutch and gearbox oil.
- Every 10 or 12 speed contests, approximately, replacement of the piston for a new one is advisable and also every 20 speed contests for the piston and the cylinder jacket.
- On every contests the air filter performances should be checked and replaced for a new one if the old appears to be full of dirtiness.

OTHER INTERESTING NUMERICAL DATA

WHEEL DRIVE

-Chain-

Type Simple
Pitch 15,875 mm. (5/8")
Roller diameter 10,16 mm. (0,4")
Face between plates 6,48 mm. (0,255")
Gearbox projection pinion .. 12 teeth (optional, 11 teeth)
Toothed gear over rear hub . 56 teeth (52,54 and 58 teeth optional)

WHEELS

Front type Cross type 3,00" x 21"
Rear tyre Cross type 4,00" x 18"
Front wheel spokes 36 of 4 x 226 mm.
Rear wheel spokes 36 of 4 x 156 mm.

CLUTCH

Number of driven disks ... 7
Number of intermediate disks.9
Clutch disk assembly deflection . 0,4 to 0,6 mm.

BEARING DIMENSIONS

Crankshaft 3 of 25 x 52 x 15 (no.6205/C-3)
Main shaft, right side ... 1 of 15 x 35 x 11 (angular interface)
Main shaft, left side 1 of 20 x 47 x 14 (no.7202)
Secondary shaft, left side 1 of 15 x 35 x 11 (no.6204)
Secondary shaft, right side 1 of 20 x 47 x 14 (no.6204)
Clutch toothed gear 1 of 17 x 40 x 17,5 (double row)(no.3203)
Front and rear wheel 4 of 17 x 40 x 12 (no.6203)
Steering wheel 2 of 25 x 52 x 15 (taper rollers)(no.30205)

TEETH OF SPEED GEARBOX

Primary 1st gear pinion .. 13 teeth
Primary 2nd gear pinion .. 15 teeth
Primary 3rd gear pinion .. 17 teeth
Primary 4th gear pinion .. 19 teeth
Primary 5th gear pinion .. 20 teeth
Secondary 1st gear pinion. 24 teeth
Secondary 2nd gear pinion. 22 teeth
Secondary 3rd gear pinion. 20 teeth
Secondary 4th gear pinion. 18 teeth
Secondary 5th gear pinion. 16 teeth

GENERAL FEATURES

Wheelbase 1370 mm. (4,494 ft.)
Overall length 2040 mm. (6,692 ft.)
Saddle height from the -
ground 800 mm. (2,624 ft.)
Ground clearance 210 mm. (0,689 ft.)
Handlebar width 890 mm. (2,920 ft.)
Tank capacity 7 litres (1,8 USA gal - 1,5 imp. gal.)
Dry motorcycle weight 98 Kgs. (216 lbs.)

63M-7201

OTHER INTERESTING NUMERICAL DATA

WHEEL DRIVE

- Chain -

Type	Simple
Pitch	15,875 mm. (5/8")
Roller diameter	10,16 mm. (0,4")
Face between plates	6,48 mm. (0,255")
Gearbox projection pinion	12 teeth (optional, 11 teeth)
Toothed gear over rear hub	56 teeth (52; 54 and 58 teeth optional)

WHEELS

Front type	Cross type 3,00" x 21"
Rear type	Cross type 4,00" x 18"
Front wheel spokes	36 of 3,5 x 226 mm.
Rear wheel spokes	36 of 4 x 156 mm.

CLUTCH

Number of driven disks	7
Number of intermediata disks	9
Clutch disk assembly deflection	0,4 to 0,6 mm.

BEARING DIMENSIONS

Crankshaft	3 of 25 x 52 x 15 (no. 6205/C-3)
Main shaft, right side	1 of 15 x 35 x 11 (angular interface)
Main shaft, left side	1 of 20 x 47 x 14 (no. 7202)
Secondary shaft, left side	1 of 15 x 35 x 11 (no. 6202)
Clutch toothed gear	1 of 17 x 40 x 17,5 (double row) (no. 3203)
Secondary shaft, right side	1 of 20 x 47 x 14 (no. 6204)
Front and rear wheel	4 of 17 x 40 x 12 (no. 6203)
Steering wheel	2 of 25 x 52 x 15 (taper rollers)(no. 30205)

TEETH OF SPEED GEARBOX

Primary 1st gear pinion	13 teeth
Primary 2nd gear pinion	15 teeth
Primary 3rd gear pinion	17 teeth
Primary 4th gear pinion	19 teeth
Primary 5th gear pinion	20 teeth
Secondary 1st gear pinion	24 teeth
Secondary 2nd gear pinion	22 teeth
Secondary 3rd gear pinion	20 teeth
Secondary 4th gear pinion	18 teeth
Secondary 5th gear pinion	16 teeth

GENERAL FEATURES

Wheelbase	1380 mm. (4,527 ft.)
Overall length	2060 mm. (6,758 ft.)
Saddle height from the ground	820 mm. (2,690 ft.)
Ground clearance	230 mm. (0,754 ft.)
Handlebar width	900 mm. (2,952 ft.)
Tank capacity	7 litres (1,8 USA gal - 1,5 imp. gal.)
Dry motorcycle weight	102 kgs. (225 lbs.)

INSTRUCTIONS FOR USING THE TOOLS

DESCRIBED IN THE ATTACHED SHEET

Many of the motorcyclists are at the same time keen enthusiasts of called "do-it-yourself" stuff and actually they do prefer taking care of the maintenance of their motorcycles by themselves. That is very easy in the case of the Montesa motorcycles since the mechanic rules on them are quite simple, even to those who are not at all experts.

Therefore, Montesa can supply a set of tools which are very useful for that purpose.

D-8755

Screw it deep in the flywheel after having the nut off.

The flywheel is fastened by means of the immobilizer D-8769, both for taking the nut and for removing it, but in these two cases the impulse is to be done without leaning over the end of the crankshaft, in order to avoid its possible off-centering.

D-8767 - 8

This is used to tight, to loosen or to remove the superior steering nut which is placed under the handlebar. Proceed by taking the handlebar off, when loosening the clamp screw claser. This screw must be completely taken out if that nut is to be removed.

D-8769

This tool is to be used together with D-8755, in the way described above.

2.87.081

This is to operate the nuts and screws of the cylinder head. It can also be used on the nut fixing the whole clutch and its axle.

When tightening the cylinder head, do not forget to do it progressively and in diagonal. This is to avoid deformations and to make sure that the tightening top is not surpassed. This top is shown in the handlebook recommendations, at the beginning of the present catalogue.

2.87.082

It will be used for the exhaust ring nut.

13.87.126

This tool is to hold the wheel driving gear when its nut is either - tightened or loosened.

2.87.203

This tool is used to remove the driving gear once the nut is out (with the help of the immobilizer 2.87.206).

D-8825

It must be screwed deep up the bottom in the spark plug place, then the piston position can be read at the notation of the stem.

2.87.218

Having the cylinder head out, the nuts fixing the cylinder on the crankcase will be placed by inserting this key through the hole of the twisted sleeves and doing this way it is tightened or loosened, as wanted.

Apart from the operations here explained, there are others not so simple which require certain technical knowledge and more complex tools and it is advisable to leave them to the MONTESA Official Agents, who are prepared to attend the best and the quickest way to aver enquire on repair

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