



250 EXC EU
250 EXC SIX DAYS EU
250 EXC AUS
250 XC-W USA
300 EXC EU
300 EXC SIX DAYS EU
300 EXC AUS
300 XC-W USA
300 XC-W SIX DAYS USA

Art. no. 3206179en

KTM

Read this repair manual carefully and thoroughly before beginning work.

This vehicle can only fulfill the demands placed on it in the long run if the specified service work is performed regularly by qualified experts.

The repair manual was written to correspond to the most current state of this model series. We reserve the right to make changes in the interest of technical advancement without, at the same time, updating this repair manual. We shall not provide a description of general workshop methods. Likewise, safety rules that apply in a workshop are not specified here. It is assumed that repair work will be performed by a fully trained mechanic.

All specifications are non-binding. KTM Sportmotorcycle AG specifically reserves the right to modify or delete technical specifications, prices, colors, forms, materials, services, designs, equipment, etc., without prior notice and without specifying reasons, to adapt these to local conditions, as well as to stop production of a particular model without prior notice. KTM accepts no liability for delivery options, deviations from illustrations and descriptions, as well as misprints and other errors. The models portrayed partly contain special equipment that does not belong to the regular scope of supply.

© 2013 KTM-Sportmotorcycle AG, Mattighofen Austria

All rights reserved

Reproduction, even in part, as well as copying of all kinds, is permitted only with the express written permission of the copyright owner.



ISO 9001(12 100 6061)

According to the international quality management standard ISO 9001, KTM uses quality assurance processes that lead to the maximum possible quality of the products.

Issued by: TÜV Management Service

REG.NO. 12 100 6061

KTM-Sportmotorcycle AG
5230 Mattighofen, Austria

1	MEANS OF REPRESENTATION	6	6.2.6	Positioning the fork protection	34
1.1	Symbols used	6	6.2.7	Removing the fork legs	34
1.2	Formats used	6	6.2.8	Installing the fork legs	35
2	SAFETY ADVICE	7	6.2.9	Removing the fork protector	35
2.1	Repair Manual	7	6.2.10	Installing the fork protector	36
2.2	Safety advice	7	6.2.11	Performing a fork service	36
2.3	Degrees of risk and symbols	7	6.2.12	Disassembling the fork legs	36
2.4	Work rules	7	6.2.13	Removing the spring	38
3	IMPORTANT INFORMATION	8	6.2.14	Disassembling the cartridge	39
3.1	Guarantee, warranty	8	6.2.15	Disassembling the piston rod	40
3.2	Operating and auxiliary substances	8	6.2.16	Disassembling the hydrostop unit	41
3.3	Spare parts, accessories	8	6.2.17	Disassembling the seal ring retainer	42
3.4	Figures	8	6.2.18	Checking the fork legs	42
4	SERIAL NUMBERS	9	6.2.19	Assembling the seal ring retainer	43
4.1	Chassis number	9	6.2.20	Assembling the hydrostop unit	44
4.2	Type label	9	6.2.21	Assembling the piston rod	44
4.3	Engine number	9	6.2.22	Assembling the cartridge	46
4.4	Fork part number	9	6.2.23	Assembling the fork legs	47
4.5	Shock absorber part number	9	6.2.24	Greasing the steering head bearing	50
5	MOTORCYCLE	10	6.2.25	Removing the lower triple clamp	51
5.1	Raising the motorcycle with the lift stand	10	6.2.26	Installing the lower triple clamp	51
5.2	Removing the motorcycle from the lift stand	10	6.2.27	Checking the play of the steering head bearing	53
5.3	Starting	10	6.2.28	Adjusting the play of the steering head bearing	53
5.4	Starting the motorcycle for checking	11	7	HANDLEBAR, CONTROLS	54
6	FORK, TRIPLE CLAMP	12	7.1	Handlebar position	54
6.1	EXC EU/AUS, XC-W	12	7.2	Adjusting the handlebar position	54
6.1.1	Adjusting the compression damping of the fork	12	7.3	Adjusting the basic position of the clutch lever	54
6.1.2	Adjusting the rebound damping of the fork	12	7.4	Checking the routing of the throttle cable	55
6.1.3	Adjusting the spring preload of the fork	12	7.5	Checking the play in the throttle cable	55
6.1.4	Bleeding the fork legs	13	7.6	Adjusting the play in the throttle cable	56
6.1.5	Cleaning the dust boots of the fork legs	13	8	FRAME	57
6.1.6	Loosening the fork protection	14	8.1	Removing the engine guard (250/300 SIX DAYS)	57
6.1.7	Positioning the fork protection	14	8.2	Installing the engine guard (250/300 SIX DAYS)	57
6.1.8	Removing the fork legs	14	9	SHOCK ABSORBER, SWINGARM	58
6.1.9	Installing the fork legs	14	9.1	Adjusting the high-speed compression damping of the shock absorber	58
6.1.10	Removing the fork protector	15	9.2	Adjusting the low-speed compression damping of the shock absorber	58
6.1.11	Installing the fork protector	15	9.3	Adjusting the rebound damping of the shock absorber	59
6.1.12	Performing a fork service	16	9.4	Measuring the sag of the unloaded rear wheel	59
6.1.13	Disassembling the fork legs	16	9.5	Checking the static sag of the shock absorber	59
6.1.14	Cartridge disassembly	19	9.6	Checking the riding sag of the shock absorber	60
6.1.15	Disassembling the compression damping fitting	21	9.7	Adjusting the spring preload of the shock absorber	60
6.1.16	Checking the fork legs	21	9.8	Adjusting the riding sag	61
6.1.17	Assembling the compression damping fitting	22	9.9	Removing the shock absorber	61
6.1.18	Assembling the cartridge	23	9.10	Installing the shock absorber	61
6.1.19	Assembling the fork legs	24	9.11	Servicing the shock absorber	62
6.1.20	Greasing the steering head bearing	29	9.12	Removing the spring	62
6.1.21	Removing the lower triple clamp	29	9.13	Disassembling the damper	63
6.1.22	Installing the lower triple clamp	30	9.14	Disassembling the piston rod	64
6.1.23	Checking the play of the steering head bearing	31	9.15	Disassembling the seal ring retainer	65
6.1.24	Adjusting the play of the steering head bearing	32	9.16	Replacing the pilot bushing	66
6.2	250/300 SIX DAYS	32	9.17	Checking the damper	67
6.2.1	Adjusting the compression damping of the fork	32	9.18	Disassembling the rebound adjuster	67
6.2.2	Adjusting the rebound damping of the fork	33	9.19	Removing the heim joint	68
6.2.3	Bleeding the fork legs	33	9.20	Installing the heim joint	69
6.2.4	Cleaning the dust boots of the fork legs	33			
6.2.5	Loosening the fork protection	34			

9.21	Assembling the rebound adjuster	70	15.5	Disconnecting the negative cable of the battery	102
9.22	Assembling the seal ring retainer	70	15.6	Connecting the negative cable of the battery....	103
9.23	Assembling the piston rod.....	71	15.7	Removing the battery	103
9.24	Assembling the damper	72	15.8	Installing the battery	104
9.25	Bleeding and filling the damper	75	15.9	Checking the charging voltage	104
9.26	Filling the damper with nitrogen.....	77	15.10	Checking the closed current.....	104
9.27	Installing the spring	78	15.11	Checking the starter relay	105
9.28	Changing the heim joint.....	79	16	BRAKE SYSTEM	106
10	EXHAUST	81	16.1	Checking the front brake linings	106
10.1	Removing the main silencer	81	16.2	Changing the front brake linings.....	106
10.2	Installing the main silencer.....	81	16.3	Checking the free travel of the hand brake lever	108
10.3	Changing the glass fiber yarn filling of the main silencer.....	81	16.4	Adjusting free travel of hand brake lever (All 250/300 EXC models).....	108
11	AIR FILTER	83	16.5	Adjusting the basic position of the hand brake lever (all 250/300 XC-W)	108
11.1	Removing the air filter box lid	83	16.6	Checking the front brake fluid level	109
11.2	Installing the air filter box lid	83	16.7	Adding front brake fluid.....	109
11.3	Removing the air filter	83	16.8	Changing the front brake fluid.....	110
11.4	Installing the air filter.....	83	16.9	Checking the rear brake linings	111
11.5	Cleaning the air filter and air filter box.....	84	16.10	Changing the brake linings of the rear brake	112
11.6	Sealing the air filter box	84	16.11	Checking the free travel of foot brake lever	113
12	FUEL TANK, SEAT, TRIM	85	16.12	Adjusting the basic position of the foot brake lever	113
12.1	Opening the filler cap.....	85	16.13	Checking the rear brake fluid level.....	114
12.2	Closing the filler cap	85	16.14	Adding brake fluid for the rear brake.....	114
12.3	Removing the seat	85	16.15	Changing the rear brake fluid	115
12.4	Mounting the seat	86	17	LIGHTING SYSTEM, INSTRUMENTS	117
12.5	Removing the fuel tank.....	86	17.1	Checking the headlight setting	117
12.6	Installing the fuel tank	87	17.2	Adjusting the headlight range.....	117
12.7	Fuel tap	88	17.3	EXC EU/AUS, XC-W.....	117
13	MASK, FENDER	89	17.3.1	Speedometer overview.....	117
13.1	Removing the front fender	89	17.3.2	Activation and test.....	118
13.2	Installing the front fender	89	17.3.3	Setting kilometers or miles	118
13.3	Removing the headlight mask with the headlight.....	89	17.3.4	Adjusting the speedometer functions	118
13.4	Refitting the headlight mask with the headlight.....	90	17.3.5	Setting the clock	119
14	WHEELS	91	17.3.6	Activating the additional functions	119
14.1	Checking the tire air pressure.....	91	17.3.7	Setting the wheel circumference	120
14.2	Checking the tire condition	91	17.3.8	Querying lap time	120
14.3	Checking the brake discs	92	17.4	250/300 SIX DAYS	121
14.4	Checking the spoke tension.....	92	17.4.1	Speedometer overview	121
14.5	Front wheel	93	17.4.2	Activation and test.....	121
14.5.1	Removing the front wheel	93	17.4.3	Setting kilometers or miles	121
14.5.2	Installing the front wheel	93	17.4.4	Setting the speedometer functions	122
14.5.3	Removing the brake disc of the front brake....	94	17.4.5	Setting the clock	122
14.5.4	Installing the brake disc of the front brake	94	17.4.6	Setting the wheel circumference	123
14.6	Rear wheel	94	17.4.7	Viewing the lap time	123
14.6.1	Removing the rear wheel	94	18	ENGINE	124
14.6.2	Installing the rear wheel	95	18.1	Removing the engine.....	124
14.6.3	Removing the brake disc of the rear brake	96	18.2	Installing the engine.....	128
14.6.4	Installing the brake disc of the rear brake.....	96	18.3	Engine disassembly.....	133
14.6.5	Checking the chain for dirt	96	18.3.1	Clamping the engine into the engine work stand.....	133
14.6.6	Cleaning the chain.....	97	18.3.2	Draining the gear oil.....	133
14.6.7	Checking the chain tension.....	97	18.3.3	Removing the clutch push rod.....	133
14.6.8	Checking the chain, rear sprocket, engine sprocket and chain guide.....	98	18.3.4	Removing the shift lever	133
14.6.9	Adjusting the chain tension	99	18.3.5	Removing the engine sprocket.....	133
15	WIRING HARNESS, BATTERY	101	18.3.6	Removing the spacer.....	134
15.1	Plug-in connection, ignition timing map.....	101	18.3.7	Removing the starter motor.....	134
15.2	Removing the main fuse	101	18.3.8	Removing the kick starter	135
15.3	Installing the main fuse	101	18.3.9	Removing the cylinder head.....	136
15.4	Recharging the battery	101			

18.3.10	Removing the cylinder	136	18.5.7	Installing the reed valve housing	172
18.3.11	Removing the piston	137	18.5.8	Installing the rotor	172
18.3.12	Removing the water pump cover	138	18.5.9	Installing the locking lever	173
18.3.13	Removing the clutch cover	138	18.5.10	Installing the shift drum locating unit	173
18.3.14	Removing the clutch discs	138	18.5.11	Installing the shift shaft	173
18.3.15	Removing the clutch basket	139	18.5.12	Installing the intermediate kick starter gear	173
18.3.16	Removing the kick starter shaft	140	18.5.13	Installing the kick starter shaft	173
18.3.17	Removing the intermediate kick starter gear	140	18.5.14	Installing the clutch basket	174
18.3.18	Removing the shift shaft	141	18.5.15	Installing the clutch discs	175
18.3.19	Removing the shift drum locating unit	141	18.5.16	Installing the clutch cover	176
18.3.20	Removing the locking lever	141	18.5.17	Installing the water pump cover	177
18.3.21	Removing the rotor	141	18.5.18	Installing the piston	177
18.3.22	Removing the reed valve housing	142	18.5.19	Installing the cylinder	178
18.3.23	Removing the left engine case section	142	18.5.20	Checking the X-distance	179
18.3.24	Removing the shift rails	142	18.5.21	Adjusting the X-distance	180
18.3.25	Removing the shift drum	143	18.5.22	Adjusting the Z-distance	180
18.3.26	Removing the shift forks	143	18.5.23	Installing the cylinder head	182
18.3.27	Removing the transmission shafts	143	18.5.24	Installing the kick starter	182
18.3.28	Removing the crankshaft	143	18.5.25	Installing the starter motor	182
18.4	Work on individual parts	144	18.5.26	Installing the spacer	184
18.4.1	Work on the right section of the engine case	144	18.5.27	Installing the engine sprocket	184
18.4.2	Work on the left section of the engine case	145	18.5.28	Installing the shift lever	184
18.4.3	Removing the crankshaft bearing inner race	145	18.5.29	Installing the clutch push rod	185
18.4.4	Installing the crankshaft bearing inner race	146	18.5.30	Installing the gear oil drain plug	185
18.4.5	Changing the connecting rod, conrod bearing, and crank pin	146	18.5.31	Removing the engine from the work stand ..	185
18.4.6	Checking the crankshaft run-out at the bearing pin	147	19	CARBURETOR	186
18.4.7	Checking/measuring the cylinder	147	19.1	Choke	186
18.4.8	Removing the exhaust control	148	19.2	Carburetor - adjusting the idle speed	186
18.4.9	Checking the exhaust control	150	19.3	Emptying the carburetor float chamber	187
18.4.10	Installing the exhaust control	150	19.4	Removing the carburetor	187
18.4.11	Cylinder - Nikasil® coating	152	19.5	Installing the carburetor	188
18.4.12	Checking/measuring the piston	153	19.6	Checking/adjusting the carburetor components	189
18.4.13	Checking the piston ring end gap	154	19.7	Disassembling the carburetor	190
18.4.14	Piston/cylinder - measuring the mounting clearance	154	19.8	Checking the choke slide	191
18.4.15	Checking the reed valve housing, reed valve, and intake flange	155	19.9	Checking the jet needle	191
18.4.16	Work on the clutch cover	155	19.10	Checking the throttle slide	191
18.4.17	Checking the clutch	159	19.11	Checking the float needle valve	192
18.4.18	Preassembling the shift shaft	160	19.12	Assembling the carburetor	192
18.4.19	Checking the shift mechanism	161	19.13	Checking/adjusting the float level	193
18.4.20	Disassembling the main shaft	162	20	CLUTCH	194
18.4.21	Disassembling the countershaft	163	20.1	Checking/correcting the fluid level of the hydraulic clutch	194
18.4.22	Checking the transmission	163	20.2	Changing the hydraulic clutch fluid	194
18.4.23	Assembling the main shaft	164	21	WATER PUMP, COOLING SYSTEM	195
18.4.24	Assembling the countershaft	165	21.1	Cooling system	195
18.4.25	Checking the kick starter	167	21.2	Checking the antifreeze and coolant level	195
18.4.26	Preassembling the kick starter shaft	167	21.3	Checking the coolant level	195
18.4.27	Checking the electric starter drive	169	21.4	Draining the coolant	196
18.5	Engine assembly	170	21.5	Refilling with coolant	196
18.5.1	Installing the crankshaft	170	22	EXHAUST CONTROL	198
18.5.2	Installing the transmission shafts	170	22.1	Engine characteristic - setting the auxiliary spring	198
18.5.3	Installing the shift forks	171	23	LUBRICATION SYSTEM	199
18.5.4	Installing the shift drum	171	23.1	Changing the gear oil	199
18.5.5	Installing the shift rails	171	23.2	Draining the gear oil	199
18.5.6	Installing the left engine case section	171	23.3	Refilling with gear oil	200
			23.4	Checking the gear oil level	200
			23.5	Adding gear oil	200
			24	IGNITION SYSTEM	202
			24.1	Checking the ignition system	202

TABLE OF CONTENTS

24.2	Ignition coil - checking the primary winding.....	202	30.6	Page 1 of 5 (250 EXC SIX DAYS EU, 300 EXC SIX DAYS EU).....	236
24.3	Ignition coil - checking the secondary winding.....	203	30.7	Page 2 of 5 (250 EXC SIX DAYS EU, 300 EXC SIX DAYS EU).....	238
24.4	Checking the spark plug connector	203	30.8	Page 3 of 5 (250 EXC SIX DAYS EU, 300 EXC SIX DAYS EU).....	240
24.5	Alternator - checking the charging coil of the ignition	204	30.9	Page 4 of 5 (250 EXC SIX DAYS EU, 300 EXC SIX DAYS EU).....	242
24.6	Alternator - checking the battery winding	204	30.10	Page 5 of 5 (250 EXC SIX DAYS EU, 300 EXC SIX DAYS EU).....	244
24.7	Alternator - checking the light winding.....	205	30.11	Page 1 of 5 (250/300 EXC AUS).....	246
24.8	Checking the ignition pulse generator	205	30.12	Page 2 of 5 (250/300 EXC AUS).....	248
24.9	Removing the stator and crankshaft position sensor.....	206	30.13	Page 3 of 5 (250/300 EXC AUS).....	250
24.10	Installing the stator and crankshaft position sensor.....	206	30.14	Page 4 of 5 (250/300 EXC AUS).....	252
25	ELECTRIC STARTER	207	30.15	Page 5 of 5 (250/300 EXC AUS).....	254
25.1	Checking the starter motor	207	30.16	Page 1 of 3 (250 XC-W USA, 300 XC-W USA).....	256
26	TECHNICAL DATA.....	208	30.17	Page 2 of 3 (250 XC-W USA, 300 XC-W USA).....	258
26.1	Engine	208	30.18	Page 3 of 3 (250 XC-W USA, 300 XC-W USA).....	260
26.1.1	All 250 models.....	208	30.19	Page 1 of 3 (300 XC-W SIX DAYS USA)	262
26.1.2	All 300 models.....	208	30.20	Page 2 of 3 (300 XC-W SIX DAYS USA)	264
26.2	Engine tolerance, wear limits	209	30.21	Page 3 of 3 (300 XC-W SIX DAYS USA)	266
26.3	Engine tightening torques	210	31	SUBSTANCES	268
26.4	Capacities	210	32	AUXILIARY SUBSTANCES	270
26.4.1	Gear oil.....	210	33	SPECIAL TOOLS	272
26.4.2	Coolant.....	210	34	STANDARDS	282
26.4.3	Fuel	211	INDEX		283
26.5	Chassis	211			
26.6	Electrical system.....	212			
26.7	Tires.....	212			
26.8	Fork.....	212			
26.8.1	EXC EU/AUS, XC-W.....	212			
26.8.2	250/300 SIX DAYS.....	213			
26.9	Shock absorber.....	213			
26.10	Chassis tightening torques	214			
26.11	Carburetor	215			
26.11.1	250 EXC EU, 250 EXC SIX DAYS EU	215			
26.11.2	250 EXC AUS	215			
26.11.3	250 XC-W USA.....	215			
26.11.4	300 EXC EU, 300 EXC SIX DAYS EU	215			
26.11.5	300 EXC AUS	216			
26.11.6	300 XC-W USA, 300 XC-W SIX DAYS USA.....	216			
26.12	Carburetor tuning.....	217			
26.12.1	Carburetor tuning (All 250 models)	217			
26.12.2	Carburetor tuning (All 300 models)	218			
26.12.3	General carburetor tuning	219			
27	CLEANING, CARE	220			
27.1	Cleaning the motorcycle	220			
27.2	Checks and maintenance steps for winter operation.....	221			
28	STORAGE	222			
28.1	Storage	222			
28.2	Preparing for use after storage.....	222			
29	SERVICE SCHEDULE	223			
29.1	Service schedule.....	223			
29.2	Service work (as additional order)	224			
30	WIRING DIAGRAM	226			
30.1	Page 1 of 5 (250 EXC EU, 300 EXC EU).....	226			
30.2	Page 2 of 5 (250 EXC EU, 300 EXC EU).....	228			
30.3	Page 3 of 5 (250 EXC EU, 300 EXC EU).....	230			
30.4	Page 4 of 5 (250 EXC EU, 300 EXC EU).....	232			
30.5	Page 5 of 5 (250 EXC EU, 300 EXC EU).....	234			

1.1 Symbols used

The meaning of specific symbols is described below.



Indicates an expected reaction (e.g. of a work step or a function).



Indicates an unexpected reaction (e.g. of a work step or a function).



Indicates a page reference (more information is provided on the specified page).



Indicates information with more details or tips.



Indicates the result of a testing step.



Denotes a voltage measurement.



Denotes a current measurement.



Denotes a resistance measurement.

1.2 Formats used

The typographical formats used in this document are explained below.

Proprietary name Identifies a proprietary name.

Name® Identifies a protected name.

Brand™ Identifies a trademark.

2.1 Repair Manual

Read this Repair Manual carefully and thoroughly before beginning work. It contains useful information and tips that will help you repair and maintain your vehicle.

This manual assumes that the necessary special KTM tools and KTM workplace and workshop equipment are available.

2.2 Safety advice

A number of safety instructions need to be followed to operate the vehicle safely. Therefore, read this manual carefully. The safety instructions are highlighted in the text and are referred to at the relevant passages.

 **Info**
The vehicle has various information and warning labels at prominent locations. Do not remove information/warning labels. If they are missing, you or others may not recognize dangers and may therefore be injured.

2.3 Degrees of risk and symbols

 **Danger**
Identifies a danger that will immediately and invariably lead to fatal or serious permanent injury if the appropriate measures are not taken.

 **Warning**
Identifies a danger that is likely to lead to fatal or serious injury if the appropriate measures are not taken.

 **Caution**
Identifies a danger that may lead to minor injuries if the appropriate measures are not taken.

Note
Identifies a danger that will lead to considerable machine and material damage if the appropriate measures are not taken.

 **Warning**
Identifies a danger that will lead to environmental damage if the appropriate measures are not taken.

2.4 Work rules

Special tools are necessary for certain tasks. The tools are not contained in the vehicle but can be ordered under the number in parentheses. E.g.: bearing puller (15112017000)

During assembly, non-reusable parts (e.g. self-locking screws and nuts, seals and seal rings, O-rings, pins, lock washers) must be replaced by new parts.

In some instances, a thread locker (e.g. **Loctite®**) is required. The manufacturer instructions for use must be followed.

After disassembly, clean the parts that are to be reused and check them for damage and wear. Change damaged or worn parts.

After you complete the repair or service work, check the operating safety of the vehicle.

3.1 Guarantee, warranty

The work prescribed in the service schedule must be carried out by an authorized KTM workshop only and confirmed in the customer's Service & Warranty Booklet and in the **KTM dealer.net**; otherwise, all warranty claims will be void. No warranty claims can be considered for damage resulting from manipulations and/or alterations to the vehicle.

Additional information on the guarantee or warranty and the procedures involved can be found in the Service & Warranty Booklet.

3.2 Operating and auxiliary substances



Warning

Environmental hazard Improper handling of fuel is a danger to the environment.

- Do not allow fuel to get into the ground water, the ground, or the sewage system.

Use operating and auxiliary substances (such as fuel and lubricants) as specified in the Owner's Manual.

3.3 Spare parts, accessories

Only use spare parts and accessories approved and/or recommended by KTM. KTM accepts no liability for other products and any resulting damage or loss.

The current **KTM PowerParts** for your vehicle can be found on the KTM website.

International KTM Website: <http://www.ktm.com>

3.4 Figures

The figures contained in the manual may depict special equipment.

In the interest of clarity, some components may be shown disassembled or may not be shown at all. It is not always necessary to disassemble the component to perform the activity in question. Please follow the instructions in the text.