



TABLE OF CONTENTS

2

1	MEANS OF REPRESENTATION	6	7.2	Adjusting the handlebar position	41
1.1	Symbols used	6	7.3	Adjusting the basic position of the clutch lever	41
1.2	Formats used	6	7.4	Checking the throttle cable routing	42
2	SAFETY ADVICE	7	7.5	Checking the play in the throttle cable	42
2.1	Repair Manual	7	7.6	Adjusting the play in the throttle cable	42
2.2	Safety advice	7	8	SHOCK ABSORBER, SWINGARM	44
2.3	Degrees of risk and symbols	7	8.1	Adjusting the high-speed compression damping of the shock absorber	44
2.4	Work rules	7	8.2	Adjusting the low-speed compression damping of the shock absorber	44
3	IMPORTANT NOTES	8	8.3	Adjusting the rebound damping of the shock absorber	45
3.1	Guarantee, warranty	8	8.4	Measuring rear wheel sag unloaded	45
3.2	Operating and auxiliary substances	8	8.5	Checking static sag of shock absorber	45
3.3	Spare parts, accessories	8	8.6	Checking riding sag of shock absorber	46
3.4	Figures	8	8.7	Adjusting the spring preload of the shock absorber	46
4	SERIAL NUMBERS	9	8.8	Adjusting the riding sag	47
4.1	Chassis number	9	8.9	Removing the shock absorber	47
4.2	Type label	9	8.10	Installing the shock absorber	48
4.3	Engine number	9	8.11	Checking the shock absorber linkage	49
4.4	Fork part number	9	8.12	Servicing the shock absorber	50
4.5	Shock absorber part number	9	8.13	Removing the spring	51
5	MOTORCYCLE	10	8.14	Disassembling the damper	51
5.1	Raising the motorcycle with the lift stand	10	8.15	Disassembling the piston rod	53
5.2	Removing the motorcycle from the lift stand	10	8.16	Disassembling the seal ring retainer	54
5.3	Starting	10	8.17	Changing the pilot bushing	54
5.4	Starting the motorcycle for checking	11	8.18	Checking the damper	55
6	FORK, TRIPLE CLAMP	12	8.19	Removing the heim joint	56
6.1	Adjusting the compression damping of the fork	12	8.20	Installing the heim joint	57
6.2	Adjusting the rebound damping of the fork	12	8.21	Assembling the seal ring retainer	57
6.3	Bleeding the fork legs	12	8.22	Assembling the piston rod	58
6.4	Cleaning the dust boots of the fork legs	13	8.23	Assembling the damper	59
6.5	Removing the fork legs	13	8.24	Bleeding and filling the damper	61
6.6	Installing the fork legs	14	8.25	Filling the damper with nitrogen	64
6.7	Removing the fork protector	14	8.26	Installing the spring	65
6.8	Installing the fork protector	14	9	EXHAUST	66
6.9	Conducting major fork service	15	9.1	Removing the manifold	66
6.10	Conducting minor fork service	15	9.2	Installing the manifold	66
6.11	Disassembling the fork legs	16	9.3	Removing the main silencer	67
6.12	Disassembling the cartridge	18	9.4	Installing the main silencer	67
6.13	Disassembling the piston rod	20	9.5	Changing the glass fiber yarn filling of the main silencer	67
6.14	Disassembling the screw cap with the membrane holder	21	10	AIR FILTER	69
6.15	Disassembling the screw sleeve	23	10.1	Removing the air filter box lid	69
6.16	Checking the fork legs	23	10.2	Installing the air filter box lid	69
6.17	Checking the fork legs - during a minor fork service	25	10.3	Removing the air filter	69
6.18	Changing the pilot bushing	26	10.4	Installing the air filter	70
6.19	Assembling the screw sleeve	27	10.5	Cleaning the air filter and air filter box	70
6.20	Assembling the screw cap with the membrane holder	27	10.6	Sealing the air filter box	71
6.21	Assembling the piston rod	28	10.7	Securing the air filter box lid	71
6.22	Assembling the cartridge	29	11	FUEL TANK, SEAT, TRIM	72
6.23	Assembling the fork legs	31	11.1	Opening the filler cap	72
6.24	Bleeding and filling the cartridge	34	11.2	Closing the filler cap	72
6.25	Filling the cartridge with nitrogen	36	11.3	Removing the seat	72
6.26	Greasing the steering head bearing	36	11.4	Mounting the seat	73
6.27	Removing the lower triple clamp	37	11.5	Removing the fuel tank	73
6.28	Installing the lower triple clamp	37	11.6	Installing the fuel tank	74
6.29	Checking the steering head bearing play	39	11.7	Checking the fuel pressure	75
6.30	Adjusting the play of the steering head bearing	39	11.8	Changing the fuel pump	76
7	HANDLEBAR, CONTROLS	41	11.9	Changing the fuel filter	78
7.1	Handlebar position	41			

11.10	Changing the fuel screen	80	16.3.3	Removing the clutch push rod.....	120
12	MASK, FENDER.....	82	16.3.4	Removing the oil filter	120
12.1	Removing the front fender	82	16.3.5	Removing the starter motor	120
12.2	Installing the front fender	82	16.3.6	Removing the spark plug	120
12.3	Removing the start number plate.....	82	16.3.7	Removing the valve cover.....	121
12.4	Installing the start number plate.....	82	16.3.8	Removing the alternator cover	121
13	WHEELS	83	16.3.9	Positioning the engine at ignition top dead center.....	121
13.1	Checking the tire air pressure.....	83	16.3.10	Removing the timing chain tensioner	122
13.2	Checking the tire condition	83	16.3.11	Removing the camshaft	122
13.3	Checking the brake discs	83	16.3.12	Removing the cylinder head	123
13.4	Checking the spoke tension.....	84	16.3.13	Removing the piston	123
13.5	Front wheel	84	16.3.14	Removing the rotor.....	123
13.5.1	Removing the front wheel	84	16.3.15	Removing the timing chain	124
13.5.2	Installing the front wheel.....	85	16.3.16	Removing the ignition pulse generator	124
13.5.3	Removing the brake disc of the front brake....	86	16.3.17	Removing the suction pump.....	125
13.5.4	Installing the brake disc of the front brake	86	16.3.18	Removing the water pump cover.....	125
13.6	Rear wheel	86	16.3.19	Removing the clutch cover.....	125
13.6.1	Removing the rear wheel	86	16.3.20	Removing the clutch discs.....	126
13.6.2	Installing the rear wheel	87	16.3.21	Removing the outer clutch hub	127
13.6.3	Removing the brake disc of the rear brake....	88	16.3.22	Removing the torque limiter.....	127
13.6.4	Installing the brake disc of the rear brake....	88	16.3.23	Removing the starter idler gear.....	128
13.6.5	Checking the chain tension.....	88	16.3.24	Removing the shift shaft.....	128
13.6.6	Adjusting the chain tension	89	16.3.25	Removing the shift drum locating unit	128
13.6.7	Adjusting the chain guide.....	90	16.3.26	Removing the locking lever	128
13.6.8	Checking the chain, rear sprocket, engine sprocket and chain guide.....	90	16.3.27	Removing the force pump.....	128
13.6.9	Checking for chain dirt accumulation.....	92	16.3.28	Removing the primary gear	129
13.6.10	Cleaning the chain.....	92	16.3.29	Removing the freewheel gear	130
14	WIRING HARNESS, BATTERY.....	93	16.3.30	Removing the left engine case section	130
14.1	Changing the main fuse.....	93	16.3.31	Removing the shift rails.....	131
14.2	Removing the battery	94	16.3.32	Removing the shift drum	131
14.3	Installing the battery	94	16.3.33	Removing the shift forks.....	131
14.4	Charging the battery	94	16.3.34	Removing the transmission shafts.....	131
14.5	Checking the charging voltage	95	16.3.35	Removing the crankshaft	132
14.6	Checking the quiescent current	96	16.4	Work on individual parts	132
14.7	Checking the capacitor	96	16.4.1	Work on the right section of the engine case	132
14.8	Checking the starter relay	97	16.4.2	Work on the left section of the engine case	133
15	BRAKE SYSTEM	99	16.4.3	Removing the oil pressure regulator valve	135
15.1	Checking the front brake linings	99	16.4.4	Checking spring length of oil pressure regulator valve	135
15.2	Changing the front brake linings.....	99	16.4.5	Installing the oil pressure regulator valve....	135
15.3	Checking the free travel of the hand brake lever	100	16.4.6	Changing the crankshaft seal ring in the clutch cover	135
15.4	Adjusting the basic position of the hand brake lever	101	16.4.7	Removing the water pump	136
15.5	Checking the brake fluid level of the front brake	101	16.4.8	Installing the water pump	136
15.6	Adding front brake fluid.....	101	16.4.9	Removing the timing chain sprocket	137
15.7	Changing the front brake fluid	102	16.4.10	Installing the timing chain sprocket.....	137
15.8	Checking the rear brake linings	103	16.4.11	Changing the connecting rod, conrod bearing, and crank pin	138
15.9	Changing the rear brake linings	104	16.4.12	Checking crankshaft run-out at bearing pin	139
15.10	Checking the free travel of foot brake lever	105	16.4.13	Cylinder - Nikasil® coating	140
15.11	Adjusting the basic position of the foot brake lever	105	16.4.14	Checking/measuring the cylinder	140
15.12	Checking the rear brake fluid level.....	106	16.4.15	Checking/measuring the piston.....	140
15.13	Adding rear brake fluid	106	16.4.16	Checking the piston ring end gap	141
15.14	Changing the rear brake fluid	107	16.4.17	Measuring the piston/cylinder mounting clearance	141
16	ENGINE	109	16.4.18	Checking the oil pumps.....	142
16.1	Removing the engine.....	109	16.4.19	Disassembling the autodecompressor.....	142
16.2	Installing the engine.....	113	16.4.20	Assembling the autodecompressor	143
16.3	Engine disassembly.....	119			
16.3.1	Preparations.....	119			
16.3.2	Draining the engine oil	119			

16.4.21	Checking camshaft	143	16.5.35	Installing the oil screens.....	174
16.4.22	Checking the timing assembly.....	144	16.5.36	Removing the engine from the engine assembly stand.....	175
16.4.23	Removing the rocker arm.....	144	17	CLUTCH.....	176
16.4.24	Removing the valves.....	145	17.1	Checking/correcting the fluid level of the hydraulic clutch.....	176
16.4.25	Changing camshaft bearing.....	145	17.2	Changing the hydraulic clutch fluid	176
16.4.26	Checking the valves	146	18	WATER PUMP, COOLING SYSTEM	177
16.4.27	Checking valve springs	147	18.1	Cooling system	177
16.4.28	Checking valve spring seat.....	147	18.2	Checking the antifreeze and coolant level	177
16.4.29	Checking the cylinder head.....	147	18.3	Checking the coolant level	177
16.4.30	Checking the rocker arm shafts	148	18.4	Draining the coolant.....	178
16.4.31	Installing the valves	148	18.5	Refilling coolant	179
16.4.32	Installing the rocker arm.....	149	19	LUBRICATION SYSTEM.....	180
16.4.33	Disassembling the antihopping clutch.....	149	19.1	Oil circuit.....	180
16.4.34	Preassembling the antihopping clutch.....	150	19.2	Checking the engine oil level.....	180
16.4.35	Checking the clutch	151	19.3	Changing the engine oil and oil filter, cleaning the oil screens	181
16.4.36	Checking the shift mechanism	152	19.4	Adding engine oil.....	183
16.4.37	Preassembling the shift shaft.....	153	19.5	Checking the engine oil pressure	183
16.4.38	Disassembling the main shaft	154	20	IGNITION	185
16.4.39	Disassembling the countershaft.....	154	20.1	Ignition coil - checking the secondary winding.....	185
16.4.40	Checking the transmission	155	20.2	Checking the spark plug connector	185
16.4.41	Assembling the main shaft.....	156	20.3	Alternator - checking stator winding.....	185
16.4.42	Assembling the countershaft.....	157	20.4	Removing the stator	186
16.4.43	Checking the starter drive	158	20.5	Installing the stator	186
16.4.44	Checking the freewheel	158	21	ELECTRIC STARTER	187
16.4.45	Removing the freewheel	159	21.1	Checking the starter motor	187
16.4.46	Installing the freewheel	159	22	THROTTLE VALVE BODY	188
16.5	Engine assembly.....	160	22.1	Executing the initialization run	188
16.5.1	Installing the crankshaft.....	160	22.2	Adjusting the idle speed	188
16.5.2	Installing the transmission shafts	160	23	TECHNICAL DATA.....	189
16.5.3	Installing the shift forks.....	160	23.1	Engine	189
16.5.4	Installing the shift drum	161	23.2	Engine tolerance, wear limits	189
16.5.5	Installing the shift rails	161	23.3	Engine tightening torques	190
16.5.6	Installing the left engine case	161	23.4	Capacities	191
16.5.7	Installing the freewheel gear	162	23.4.1	Engine oil	191
16.5.8	Installing the primary gear	162	23.4.2	Coolant	191
16.5.9	Installing the force pump.....	162	23.4.3	Fuel	191
16.5.10	Installing the locking lever.....	163	23.5	Chassis	191
16.5.11	Installing the shift drum locating unit.....	164	23.6	Electrical system.....	192
16.5.12	Installing the shift shaft	164	23.7	Tires.....	192
16.5.13	Installing the starter idler gear	164	23.8	Fork.....	192
16.5.14	Installing the torque limiter	164	23.9	Shock absorber.....	193
16.5.15	Installing the outer clutch hub	164	23.10	Chassis tightening torques	193
16.5.16	Installing the clutch discs.....	165	24	CLEANING/PROTECTIVE TREATMENT.....	195
16.5.17	Installing the clutch cover	166	24.1	Cleaning the motorcycle	195
16.5.18	Installing the water pump cover.....	167	25	STORAGE.....	196
16.5.19	Installing the suction pump	167	25.1	Storage	196
16.5.20	Installing the ignition pulse generator	167	25.2	Preparing for use after storage.....	196
16.5.21	Installing the timing chain.....	168	26	SERVICE SCHEDULE	197
16.5.22	Installing the rotor	168	26.1	Service schedule.....	197
16.5.23	Installing the piston	168	26.2	Service work (as additional order)	198
16.5.24	Installing the cylinder head.....	170	27	WIRING DIAGRAM	200
16.5.25	Installing the camshaft.....	171	27.1	Page 1 of 3	200
16.5.26	Installing the timing chain tensioner.....	171	27.2	Page 2 of 3	202
16.5.27	Checking the valve clearance	172	27.3	Page 3 of 3	204
16.5.28	Adjusting the valve clearance.....	172	28	SUBSTANCES	206
16.5.29	Installing the alternator cover.....	173	29	AUXILIARY SUBSTANCES	208
16.5.30	Installing the valve cover	173	30	SPECIAL TOOLS	210
16.5.31	Installing the spark plug.....	173	31	STANDARDS	225
16.5.32	Installing the starter motor.....	173			
16.5.33	Installing the oil filter.....	174			
16.5.34	Installing the clutch push rod	174			

INDEX..... 226

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).



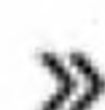
Indicates an unexpected reaction (e.g. of a work step or a function).



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 the operating and auxiliary substances (such as fuel and lubricants) as specified in the 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.

4.1 Chassis number



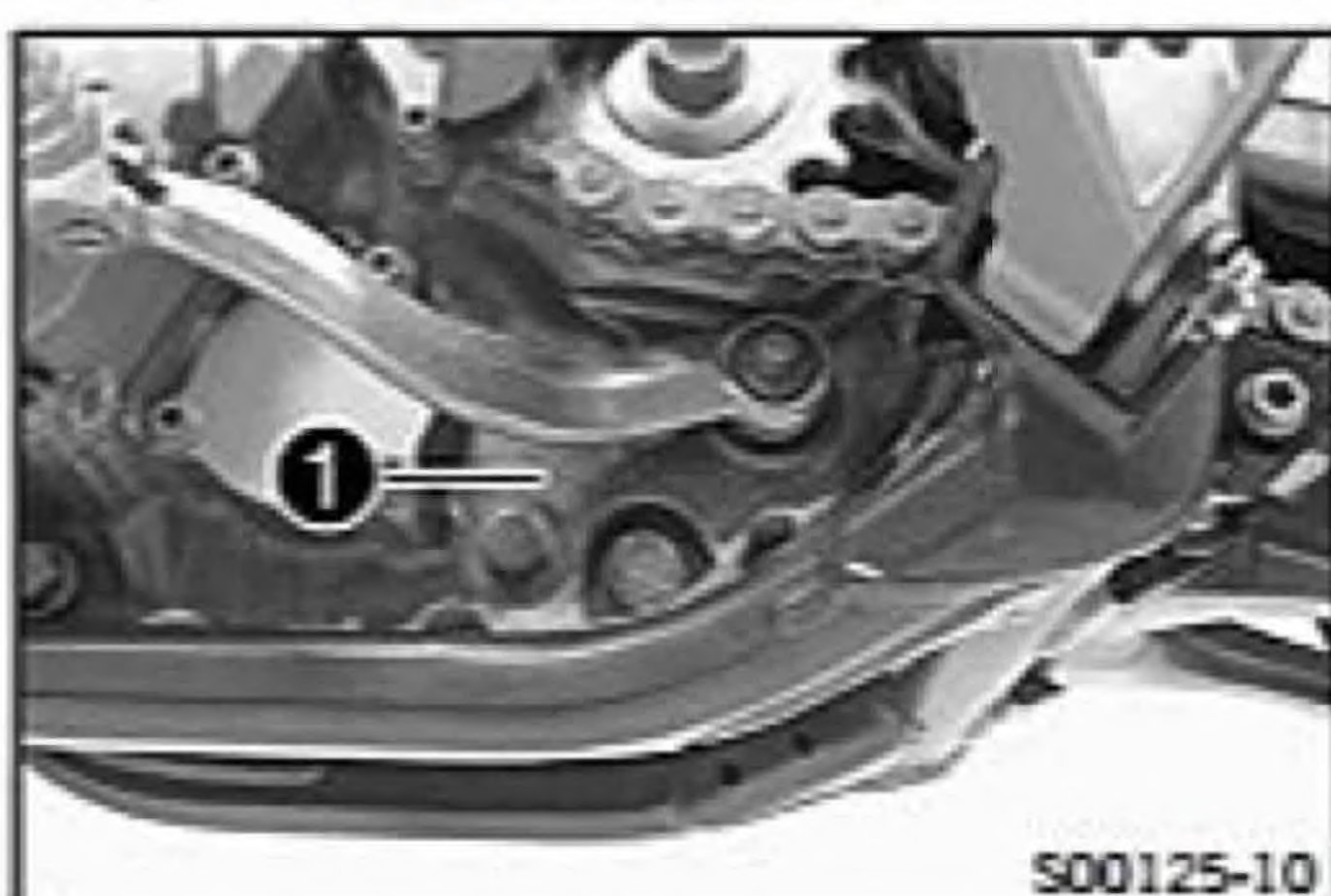
The chassis number ❶ is stamped on the right side of the steering head.

4.2 Type label



The type label ❶ is fixed to the front of the steering head.

4.3 Engine number



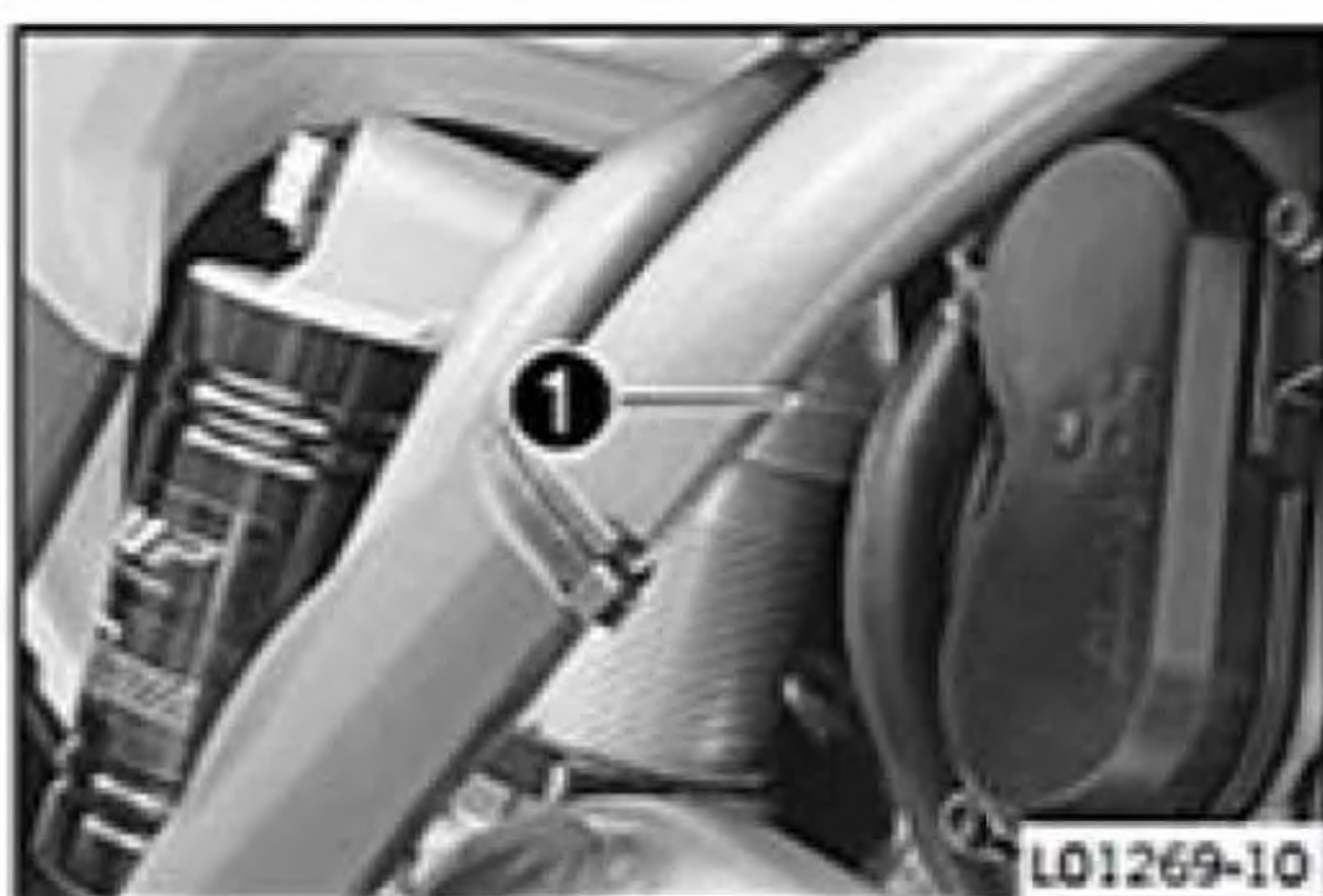
The engine number ❶ is stamped on the left side of the engine under the engine sprocket.

4.4 Fork part number



The fork part number ❶ is stamped on the inner side of the axle clamp.

4.5 Shock absorber part number



The shock absorber part number ❶ is stamped on the top of the shock absorber above the adjusting ring on the engine side.