

ROTAX®

INSTALLATION MANUAL

**125 SENIOR MAX EVO
125 JUNIOR MAX EVO
125 MINI MAX EVO
125 MICRO MAX EVO**

KART ED. 03/2021
PART NO. 297732
ROTAX-KART.COM



GENERAL INFORMATION

BRP-ROTAX RECOMMENDS PRODUCTS
OF THE FOLLOWING COMPANIES:



BRP-Rotax
INSTALLATION INSTRUCTION

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Chapter	1 – Engine installation
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Chapter: INTRO

Preface

For information regarding repair of the engine 125 MAX contact an authorized service center or consult the repair manual (available on internet under www.rotax-kart.com).

Also check out our YouTube-Channel:



Figure 1.1: QR code

Make sure to hand over this manual, the engine identity card and the product and service registration document to the new owner in case of a change of ownership.

Contents

This Installation Manual contains instructions for all the installation work on the ROTAX®-Engine Type 125 MAX evo, 125 Junior MAX evo, 125 Mini MAX evo and 125 Micro MAX evo.

General

This document and all technical data and procedures therein are property of BRP-Rotax GmbH & Co KG and based on the state of knowledge at the time of publication The Manual has been drawn up to the best of our knowledge. However, excluding any liability.

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BRP-Rotax GmbH & Co KG reserves the right at any time to discontinue or change specifications, prices, designs, features, models or equipment without incurring obligation. Engine performance may vary depending on, among other things, general conditions, ambient temperature and altitude.

NOTE

The registration document and engine identity card must be provided to the final consumer upon delivery by the authorized service center with handover date and company stamp.

NOTE

The data entered in the registration document and/or engine identity card is required for the verification of a warranty claim. Without a completely filled-in engine identity card, no warranty claim will be granted.

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In case of participating in the ROTAX® MAX CHALLENGE (RMC) the engine must be verified for conformity with the technical regulations and sealed. The serial number of the seal must be entered in the engine identity card.

Safety Messages

The types of safety messages, what they look like and how they are used in this guide are explained as follows: The safety alert symbol indicates a potential injury hazard.

⚠ WARNING
Indicates a potential hazard, if not avoided, could result in serious injury or death.

⚠ CAUTION
Indicates a hazard situation which, if not avoided, could result in minor or moderate injury.

ATTENTION
Indicates an instruction which, if not followed, could severely damage vehicle components or other property.

ENVIRONMENTAL NOTE
Environmental notes give you tips on environmental protection.

NOTE

Indicates supplementary information which may be needed to fully complete or understand an instruction.



Denotes a checking operation

TIP	This information gives you additional advice and tips
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Safety information

⚠ WARNING

Non-compliance can result in serious injuries or death!

For the best possible engine operation, compliance with the following advice regarding installation of engine and equipment is required.

⚠ WARNING

Non-compliance can result in serious injuries or death!

Engine operation is permitted only with equipment supplied by ROTAX®

⚠ WARNING

Non-compliance can result in serious injuries or death!

Besides the engine-specific installation advice, also take note of information from the respective chassis manufacturer.

Introduction

Congratulations on choosing the ROTAX engine Type 125 MAX.
The ROTAX® engine Type 125 MAX has been developed exclusively for use in Go-karts, which must only be run on specified tracks. This product has numerous technical innovations.

⚠ WARNING

Non-compliance can result in serious injuries or death!

Before starting with installation and operation of the engine, observe the installation instructions and Operator's Manual and follow all instructions.

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UNBOXING YOUR ROTAX POWERPACK

Congratulations on choosing a ROTAX engine! Your ROTAX kart engine comes delivered in two boxes.



KA_125_0316

Figure 1.2: Unboxing

Engine box

The engine box contains the assembled block engine pre-filled with gearbox oil.

Accessory box

The accessory box contains all required parts for running the engine. Check integrity of the accessory kit using the table below.

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KA_125_0326

Figure 1.3: Accessory box

Pos.	Description	Check mark
1	Radiator with coolant hoses	<input type="checkbox"/>
2	Mounting plate with ignition coil, solenoid valve and spark plug cap	<input type="checkbox"/>
3	Battery box and wiring harness	<input type="checkbox"/>
4	Battery charger	<input type="checkbox"/>
5	Intake silencer	<input type="checkbox"/>
6	Fuel pump with fuel hose	<input type="checkbox"/>
7	Exhaust system	<input type="checkbox"/>
8	Manuals and engine identity card	<input type="checkbox"/>
9	Several small parts (spark plug, screws,...)	<input type="checkbox"/>
10	Hose package for RAVE control unit	<input type="checkbox"/>
11	ECU	<input type="checkbox"/>
12	Carburetor	<input type="checkbox"/>

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ENGINE INFORMATION

Engine serial number

The engine serial number is stamped on the clutch side housing-half.

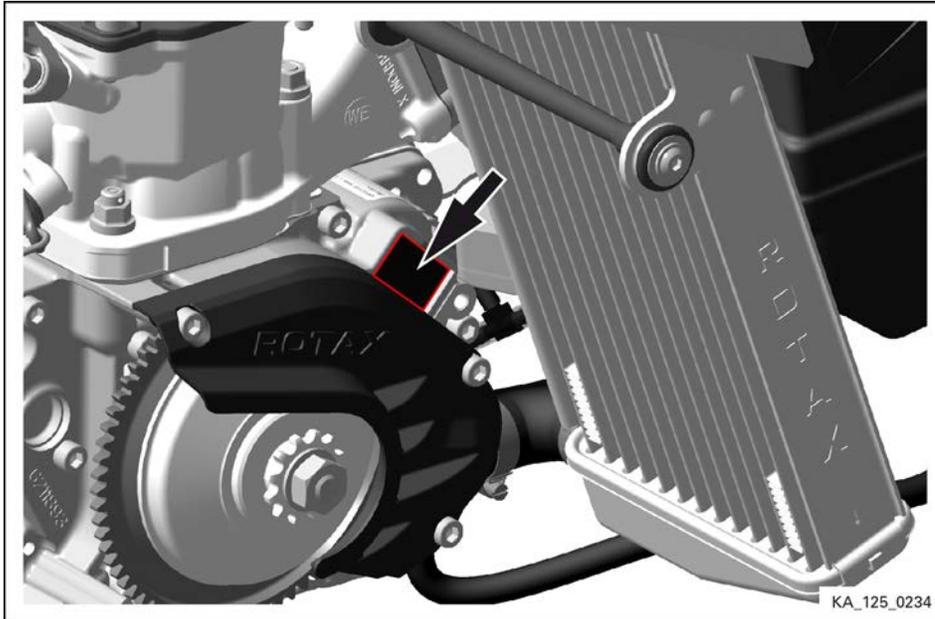


Figure 1.4: Serial number of the engine, TYPICAL

Gear oil and fuel specifications

See the latest Operators Manual.

Equipment and modifications

Modifications to engine and/or equipment are not allowed.

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INSTALLATION INSTRUCTION

Chapter: 1
ENGINE INSTALLATION

TOPICS IN THIS CHAPTER

Engine installation to the chassis.....2
Attachment via engine pedestal3

BRP-Rotax INSTALLATION INSTRUCTION

ENGINE INSTALLATION TO THE CHASSIS

Tools required:

- Allen key 8mm
- Ratchet wrench

NOTE

These instructions may differ depending on the type of chassis. They are for general information only

NOTE

Apply abrasive paper between the chassis and the engine brackets to prevent the engine from moving under racing conditions

Step	Procedure
1	Install the upper part of the engine brackets (2) to the engine (1).
2	Place the abrasive tape strips (3) in the area, where you will apply the engine to your chassis.
3	Place the engine onto the frame and pre-install the bottom engine brackets (4) to the engine (1). Make sure not to tighten them up now, so that the engine is still movable onto the frame.
4	Put the engine back as far as possible.
5	Put the chain around the rear axle and fit the chain to the front sprocket first.
6	Fit the chain also to the rear sprocket.
7	Move the engine forward to tighten the chain.
8	If you adjusted the correct chain tension, use the stopper to keep the engine in the correct position.

Step	Procedure
9	Tighten the screws for the engine brackets.
10	Make sure that the rear sprocket and the front sprocket align to each other, use a ruler to check it.

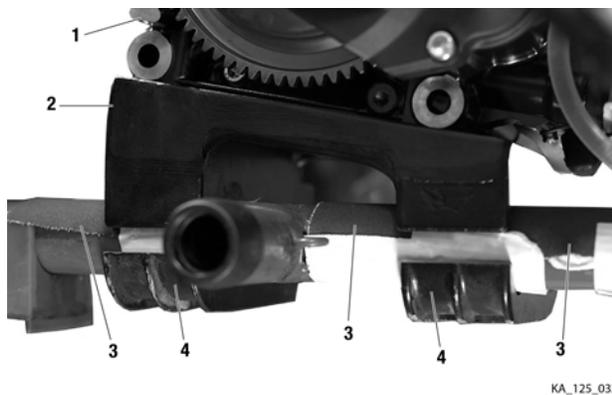


Figure 2.1: Example of Engine installation

- | | |
|------------------------|-------------------------|
| 1 Engine | 2 Upper engine bracket |
| 3 Abrasive tape strips | 4 Bottom engine bracket |

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INSTALLATION INSTRUCTION

ATTACHMENT VIA ENGINE
PEDESTAL

When using an engine pedestal for the ROTAX® engine 125 MAX evo/Junior MAX evo/Mini MAX evo/Micro MAX evo, the engine is inclined at 0° to 15° in the driving direction.

Step	Procedure
1	Drill 4 holes (8.5 mm dia / 0.315 in. = drill size) on the coordinates 80 mm x 102 mm / 3.15 in. x 4.016 in. in the top plate of the pedestal suitable for the chassis.

ATTENTION

Non-compliance can result in serious injuries!
When drilling the holes in the pedestal, pay attention to the advice of the chassis manufacturer.

Step	Procedure
2	Connect pedestal with engine crankcase with 4 screws M8 (min. strength grade 8.8). Tighten screws to 24 Nm / 212 in. lb.

ATTENTION

Pay attention to chain alignment as advised by chassis manufacturer.

NOTE

Do not fasten engine on chassis until chain is in position and properly aligned and tensioned.

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Chapter: 2
FUEL SYSTEM

TOPICS IN THIS CHAPTER

Installation and connection of the fuel pump.....	2
Installation of the Bowden cable for carburetor control.....	5
Installation and connection of the carburetor.....	7

BRP-Rotax INSTALLATION INSTRUCTION

INSTALLATION AND CONNECTION OF THE FUEL PUMP

Step	Procedure
1	The retaining plate, rubber buffers, fuel pump, fuel hose (with 230 mm and 1800 mm length) is already pre-assembled.

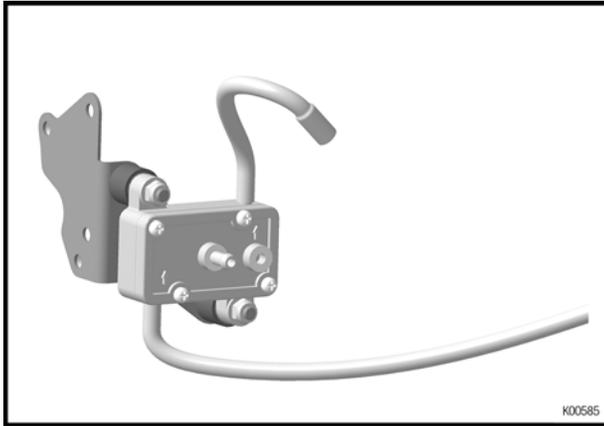


Figure 3.1

Step	Procedure
2	Install the support bracket (pos. 1) with fuel pump on the carburetor socket using 3 screws M6x30 (pos. 2). Tightening torque 6 Nm / 53 lbf in.

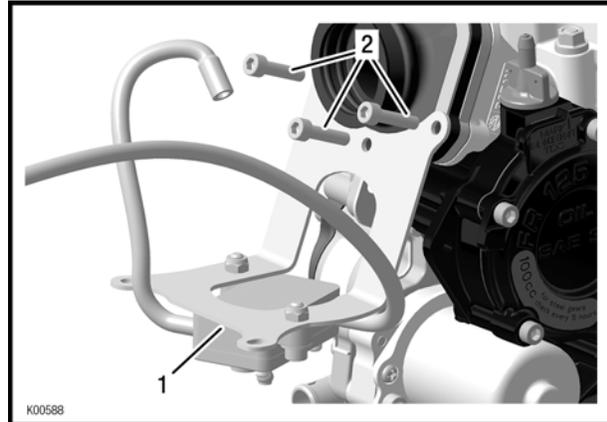


Figure 3.2

- 1 Support bracket 2 Screws M6x30

TIP Facilitate the assembly of fuel hose by slightly widening the hose end with a pair of circlip pliers.

ATTENTION

Fuel hose can be damaged!
Avoid excessive widening of the fuel hose.



Figure 3.3

Step	Procedure
3	The fuel hose with 230 mm length will be connected later to the carburetor, see carburetor installation in section 3.
4	The larger fuel hose (pos. 1) should be connected to the fuel filter (pos. 2) and to the fuel tank.

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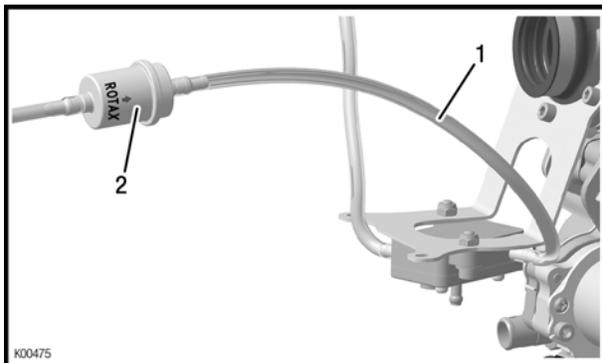


Figure 3.4

1 Large fuel hose 2 Fuel filter

Concerns all engines except 125 MAX evo

For engines without exhaust slide, a direct connection (with vacuum hose) between the gearbox and the fuel pump must be installed.

NOTE

For engines *with* exhaust slide, see chap. 8.

Step	Procedure
5	Cut a 400 mm (15.75 in.) long piece of fuel hose.
6	Secure the vacuum line (pos. 2) on the gearbox housing to prevent disengagement using a tie wrap (pos. 1).

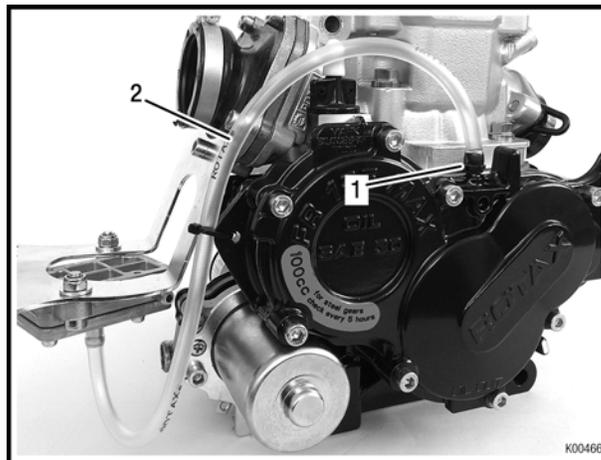


Figure 3.5

Concerns all engines

Step	Procedure
7	Install the connection between the fuel tank and the fuel filter. the length of this line may vary from chassis to chassis.

ATTENTION

Pay attention to the direction of the arrow on the fuel filter.

This must point towards the fuel pump.

⚠ WARNING

Non-compliance can result in serious injuries or death!

Route the fuel line from the fuel tank to the fuel filter so that it does not touch any moving parts of the track and attach the fuel line onto the top side of the chassis tube.

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ATTENTION

The flow in the impulse hose and fuel lines must not be restricted by the use of cable ties.

ATTENTION

The use of an extra fuel filter must not cause further flow resistance in the fuel line between the fuel tank and the fuel pump.

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INSTALLATION OF THE BOWDEN CABLE FOR CARBURETOR CONTROL

Tools required:

- Open-end wrench 10 mm

Step	Procedure
1	Carefully remove carburetor cover with rubber ring (pos. 7, 8).

⚠ CAUTION

Reset spring of carb piston presses against carburetor cover and might eject carburetor cover at removal.

Step	Procedure
2	Remove nipple screw (pos. 5) with open-end wrench 10 mm from carburetor piston (pos. 2).
3	Engage nipple of Bowden wire (pos. 9) in nipple screw (pos. 5).
4	Fit nipple screw in carburetor piston and hand tighten with open-end wrench 10 mm.
5	Insert carburetor piston (pos. 2) into carb body with recess of piston towards intake silencer.
6	Pass Bowden wire through compression spring (pos. 6) and through cover with rubber ring (pos. 7, 8) of carburetor.
7	Fit carb cover (pos. 7) on carburetor.
8	Pass Bowden wire through Bowden conduit and through adjustment screw on chassis (throttle pedal).
9	Connect Bowden cable to throttle pedal.

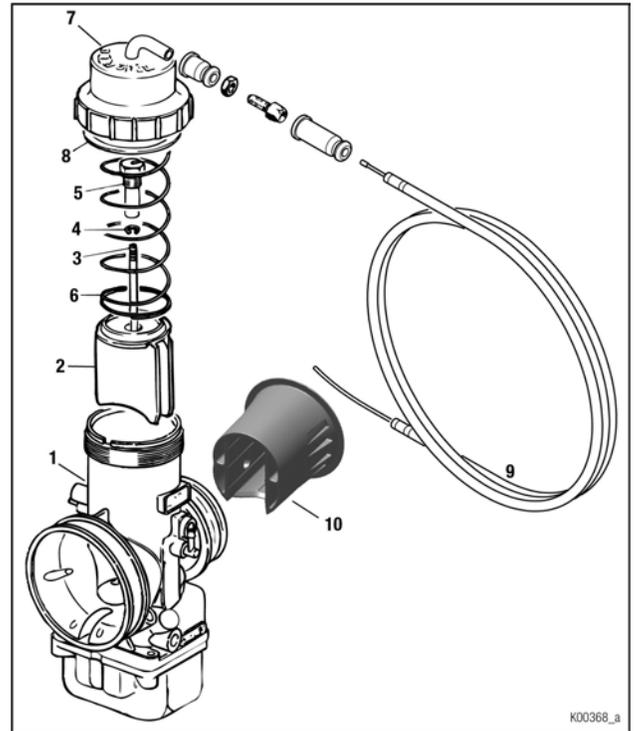


Figure 3.6

- | | |
|------------------|-------------------------------------|
| 1 Carburetor | 2 Carburetor piston |
| 3 Jet needle K57 | 4 Clip |
| 5 Nipple screw | 6 Compression spring |
| 7 Carb cover | 8 Rubber ring |
| 9 Bowden cable | 10 Restrictor (Mini, Micro MAX evo) |

NOTE

Shorten Bowden cable as required.

Step	Procedure
10	Route carburetor Bowden cable on the top side of the chassis tubes and attach with the cable ties supplied. Make sure that the Bowden cable does not touch any moving parts or the track.

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WARNING

Non-compliance can result in serious injuries or death!

The carburetor Bowden cable must not be kinked or restricted as the carburetor piston might get stuck in full throttle position.

Step	Procedure
11	Set and secure the adjustment screw for Bowden cable on chassis so that the carburetor piston will remain in closed position when throttle pedal is not activated.
12	Set and secure the stop screw for throttle pedal so that, with pedal completely pressed down, the carburetor piston will be in the full open position. The Bowden cable must not be under full tension when the throttle is in fully open position.

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INSTALLATION INSTRUCTION

**INSTALLATION AND CONNECTION
OF THE CARBURETOR**

Tools required:

- Ratchet wrench with socket 7 mm
- Phillips screwdriver

Step	Procedure
1	Fit carburetor (pos. 1) into carburetor socket and secure with hose clamp (pos. 2) in vertical position.
2	Connect the outlet hose of the fuel pump with fuel inlet (pos. 3) on the carburetor.

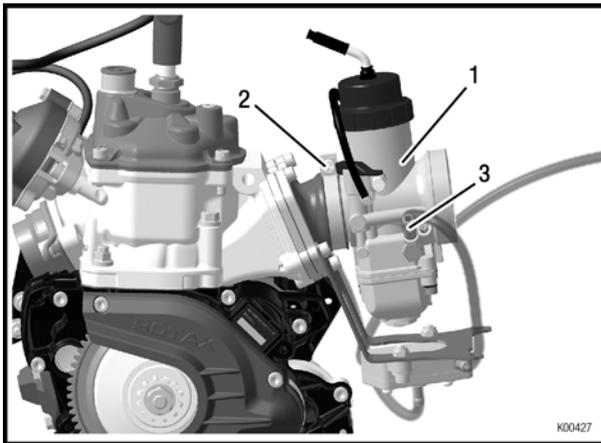


Figure 3.7

- 1 Carburetor 2 Hose clamp
3 Fuel inlet

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Chapter: 3
ELECTRIC SYSTEM

TOPICS IN THIS CHAPTER

Installation of the wiring harness	2
Wiring harness - overview	4
Installation ECU into the battery clamp assy.....	5
Installation of the battery clamp assy.	7

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INSTALLATION INSTRUCTION

INSTALLATION OF THE WIRING HARNESS

The wiring harness is delivered partly pre-assembled to facilitate the installation. This means that the relay, the multiple function switch and the battery cover are already pre-assembled and wired.

NOTE

The connector assignment is shown on the following pages. Details on the assignment of cables and pins are given in the wiring diagram.

NOTE

Cable lugs may break after repeated bending.

Step	Procedure
1	Place the wiring harness loosely on the chassis.

NOTE

Always start the installation at the engine side to work without tension on the wiring harness.

ATTENTION
Strain relief of the plug connections must be ensured.

NOTE

Compensate excessive length of wiring harness by routing cables in loops.

⚠ WARNING
Non-compliance can result in serious injuries or death!
The wiring harness must not touch moving parts of the track.

NOTE

When unplugging connections on ignition pick up and ignition coil, press the integrated catch first.

NOTE

Disconnect any electrical plug connection only by pulling against the plugs.

Step	Procedure
2	Pre-mount the large cable tie (pos.1) through the two holes provided on the mounting plate (pos. 2).

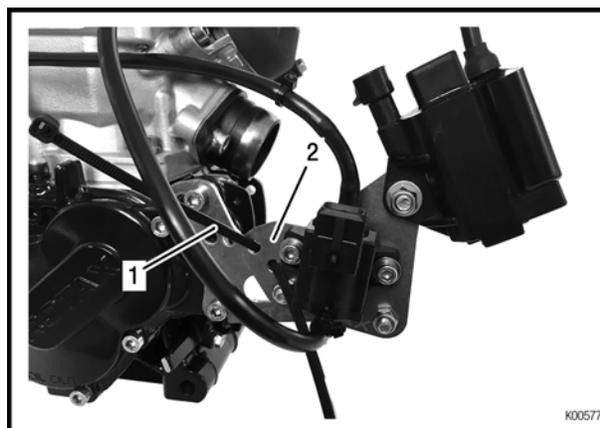


Figure 4.1

Step	Procedure
3	Connect solenoid valve (pos. 1) and ignition coil (pos. 2). Attach both connectors (signed green) (pos. 3) to the two components.

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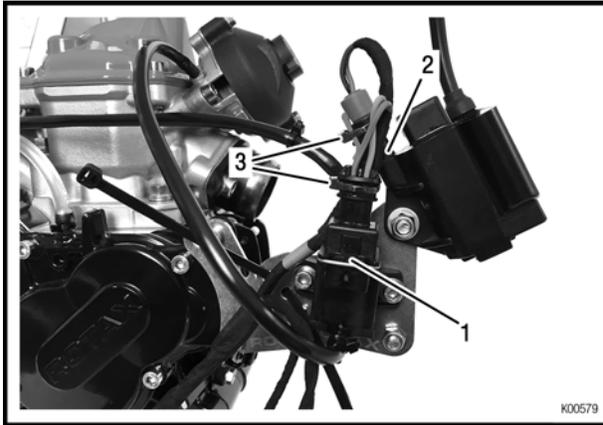


Figure 4.2

Step	Procedure
4	Connect pick-up connector to pick-up sensor (pos. 1). Pay attention to the engagement of the connector.

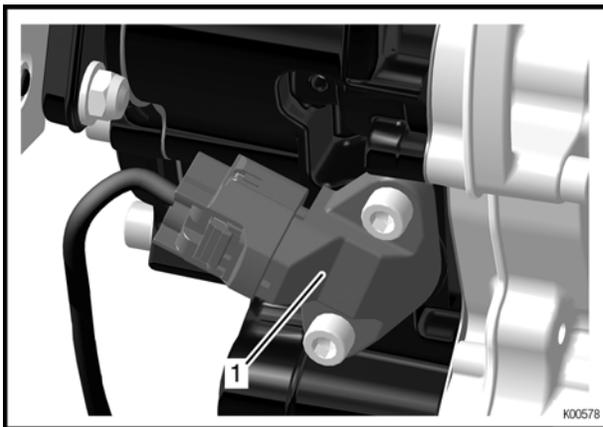


Figure 4.3

Step	Procedure
5	Fix the shift contact cable and the possibly too long cable (pos. 1) of the pick-up sensor (pos. 3) with the pre-mounted tie wrap (pos. 2) onto the mounting plate.

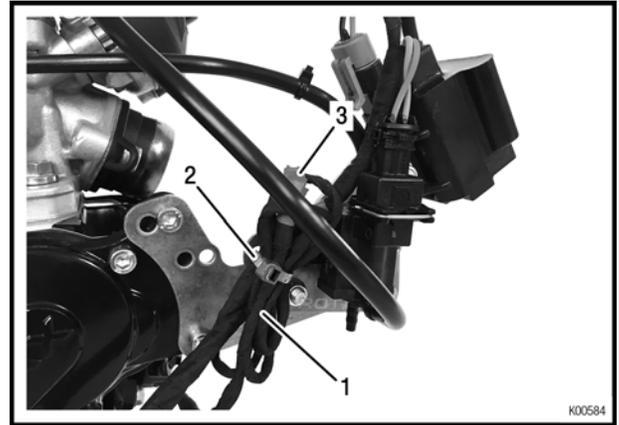


Figure 4.4

NOTE

The shift contact cable must be isolated, because there is no use on non-gear engines.

For engines without exhaust slide only:

In the following figure you see the laying of the wiring harness on engines without exhaust slide. Also you see a dummy plug (part no. 666900) as an option, which is not included in the scope of delivery. It can be secured using tie wraps instead of the solenoid valve.

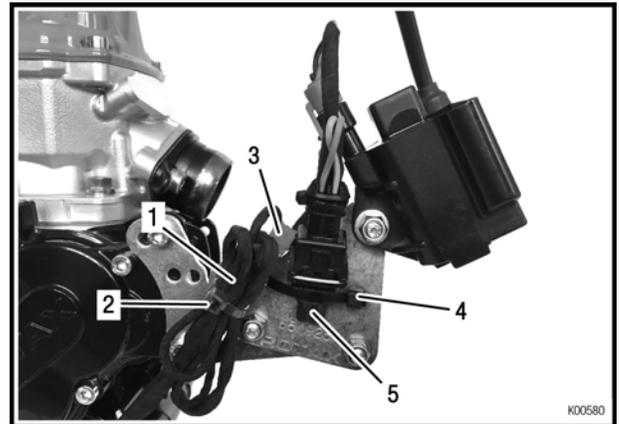


Figure 4.5

Step	Procedure
6	Attach the ignition cable onto the wiring harness.

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INSTALLATION INSTRUCTION

WIRING HARNESS - OVERVIEW

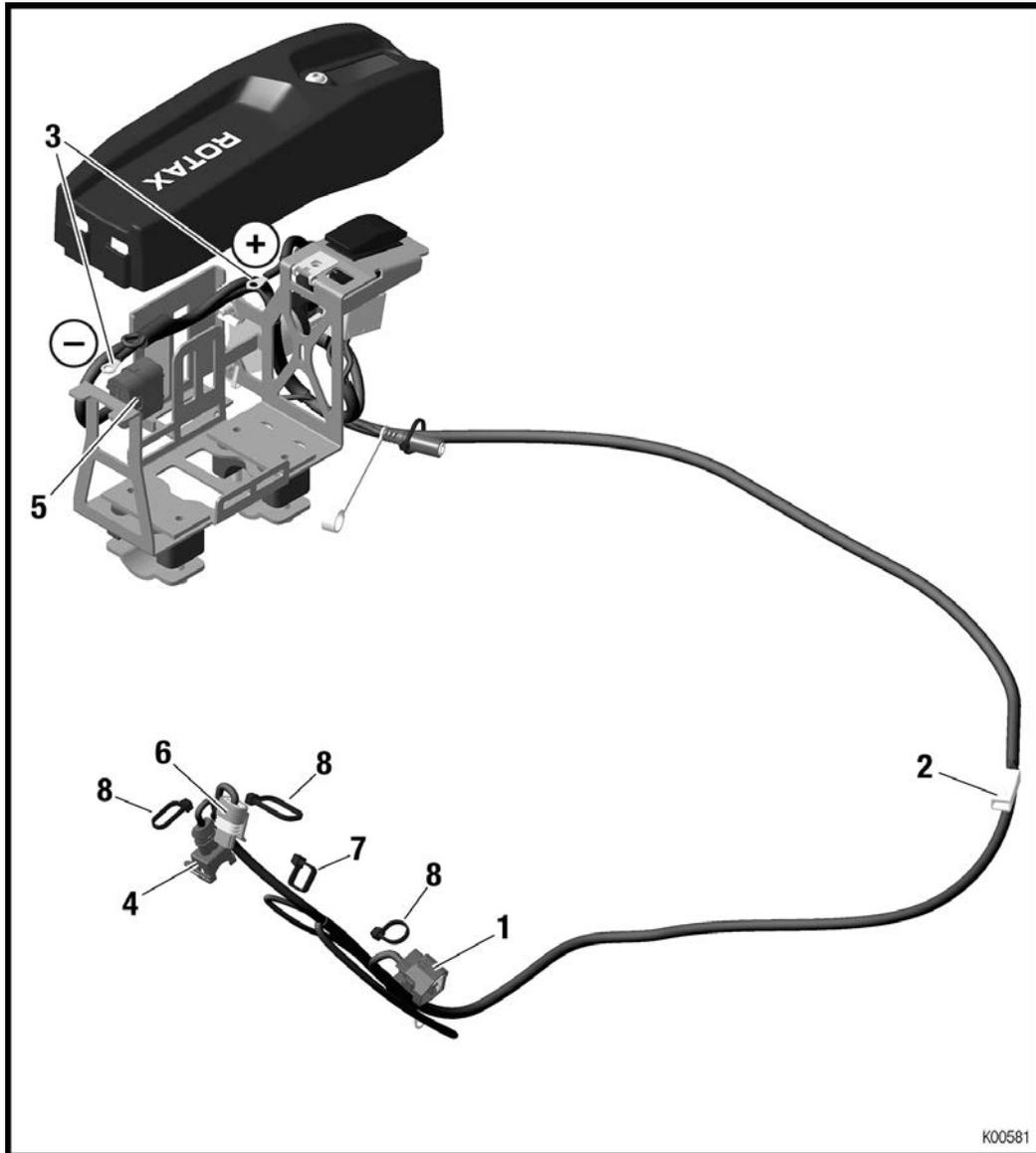


Figure 4.6: TYPICAL

- | | |
|---------------------------|--|
| 1 Connector pickup sensor | 2 Connector starter |
| 3 Connector battery | 4 Connector RAVE (only applicable 125 MAX evo) |
| 5 Connector ECU | 6 Connector ignition coil |
| 7 Tie wrap 250x4.8 | 8 Tie wrap 142x3.2 |

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INSTALLATION ECU INTO THE BATTERY CLAMP ASSY.

Step	Procedure
1	Prepare rubber pad (consists of two halves) (pos. 1) and the ECU (pos. 2) for installation.

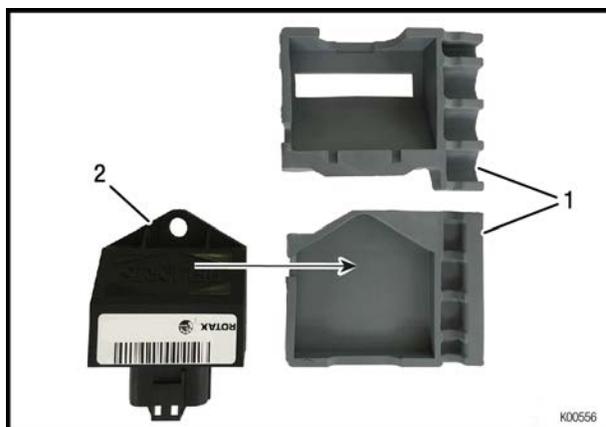


Figure 4.7

1 Rubber pad 2 ECU

Step	Procedure
2	Install the rubber pad (pos. 1) onto the ECU.

TIP Align at the triangular bottom of the ECU. It fits only in one position to the rubber pad.

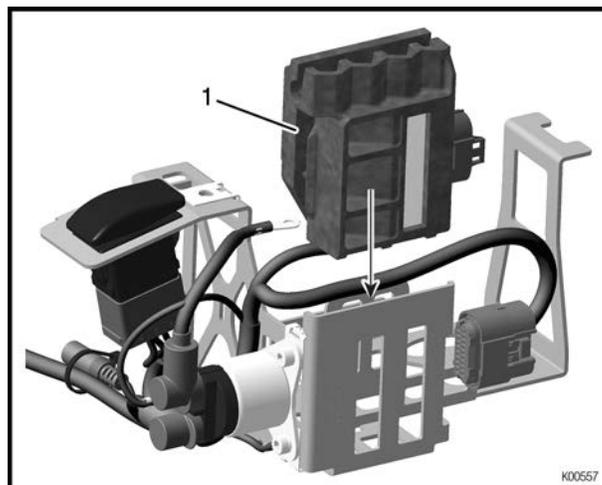


Figure 4.8

1 Rubber pad

Step	Procedure
3	Insert the complete unit into the battery clamp assy..

NOTE

If difficulties at insertion occur, the inside of the battery clamp assy. can be easily bent inward so that the distance increases slightly.

ATTENTION

Make sure that the connection cable has been installed between the two pads.
The connection of the ECU is on the rear side (against the driving direction).

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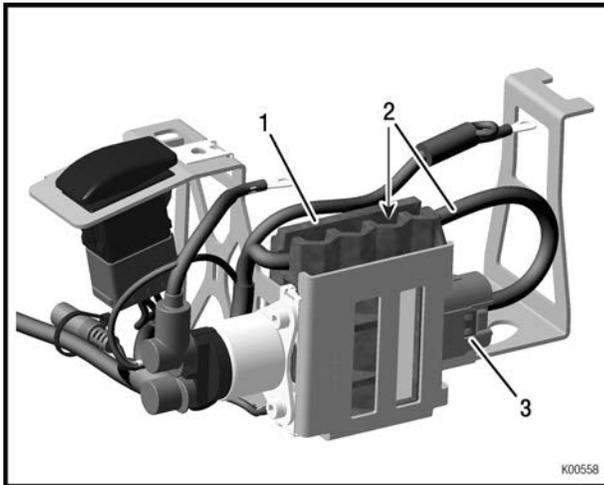


Figure 4.9

- | | | | |
|---|----------------------|---|-------------------------|
| 1 | <i>Rubber pad</i> | 2 | <i>Connection cable</i> |
| 3 | <i>ECU connector</i> | | |

BRP-Rotax INSTALLATION INSTRUCTION

INSTALLATION OF THE BATTERY CLAMP ASSY.

Tools required:

- Allen key 4 mm
- Ratchet wrench with socket 8 mm or Phillips screwdriver

⚠ WARNING

Non-compliance can result in serious injuries or death!

Make absolutely sure to avoid short-circuiting of battery terminals. A short circuit will ruin the battery and could cause an explosion.

Step	Procedure
1	Attach the battery fixture (pos. 5) with the two pipe clamps (pos. 1 – 4) on the left side box beside the driver's seat.

NOTE

The clamps (pos. 2, 3) are designed for chassis tubes of 30 - 32 mm (1.18 – 1.26 in) diameter.

ATTENTION

Risk of clamp fracture!

Do not over tighten the screw of the pipe clamps.

Step	Procedure
2	Install rubber pad (pos. 6) with battery (pos. 7) into the battery holder (pos. 5).
3	Put the battery (pos. 7) into the fixture and install the cover (pos. 8) using the Allen screw with rounded flange head (pos. 9). Fix the wiring harness in the P-clamp (12) using Allen screw (13).

TIP The battery fixture (pos. 5) can be fixed with one screw on one side of the clamp (pos. 3).

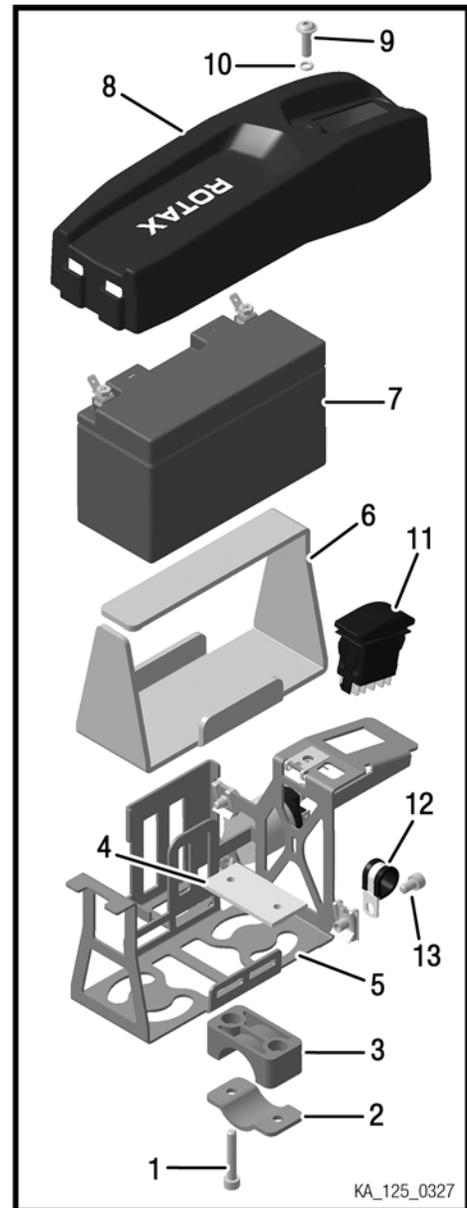


Figure 4.10

- | | |
|----------------------|-----------------------------|
| 1–4 Pipe clamps | 5 Battery fixture |
| 6 Rubber pad | 7 Battery |
| 8 Battery cover | 9 Flange head screw |
| 10 O-ring | 11 Multiple function switch |
| 12 Cable clamp 15/M6 | 13 Allen screw M6x10 |

BRP-Rotax INSTALLATION INSTRUCTION

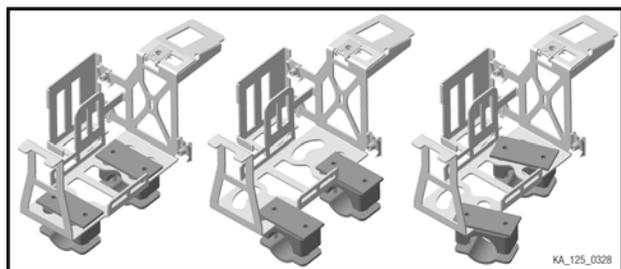


Figure 4.11

NOTE

The battery terminals must point in the direction of the control unit.

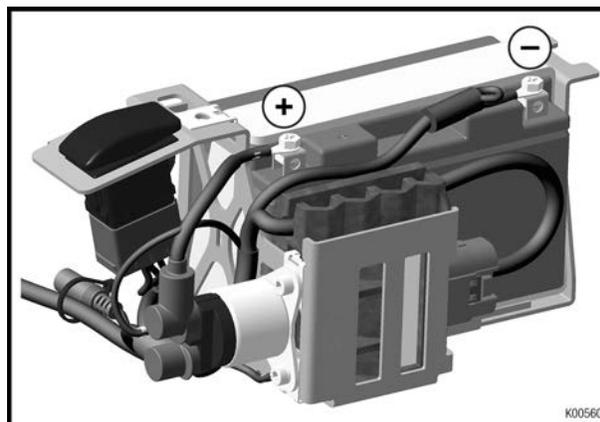


Figure 4.13

Step	Procedure
6	Install the battery cover onto the battery holder.

NOTE

Make sure that the two retaining lugs (pos. 1) are in the notches of the battery cover!

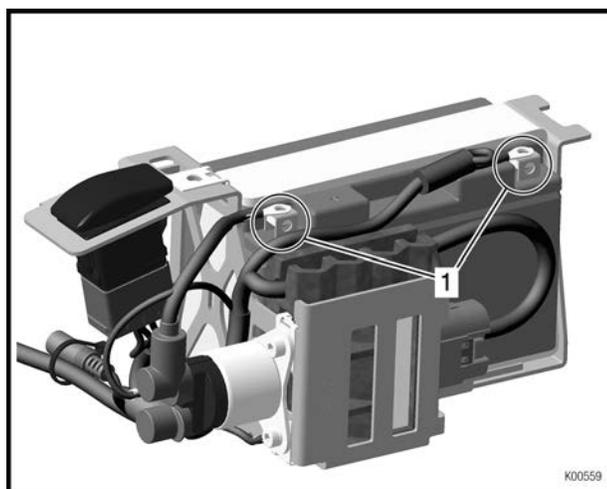


Figure 4.12

1 Battery terminals

Step	Procedure
4	Connect the positive terminal (red) of the battery.
5	Connect the negative terminal (black) of the battery.



Figure 4.14

1 Retaining lugs

2 Flange head screw

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Chapter: 4
COOLING SYSTEM

TOPICS IN THIS CHAPTER

Cooling system - overview	2
Installation of the radiator	3
Intake silencer	5
Installation of the intake silencer with integrated airfilter	6

BRP-Rotax INSTALLATION INSTRUCTION

COOLING SYSTEM - OVERVIEW

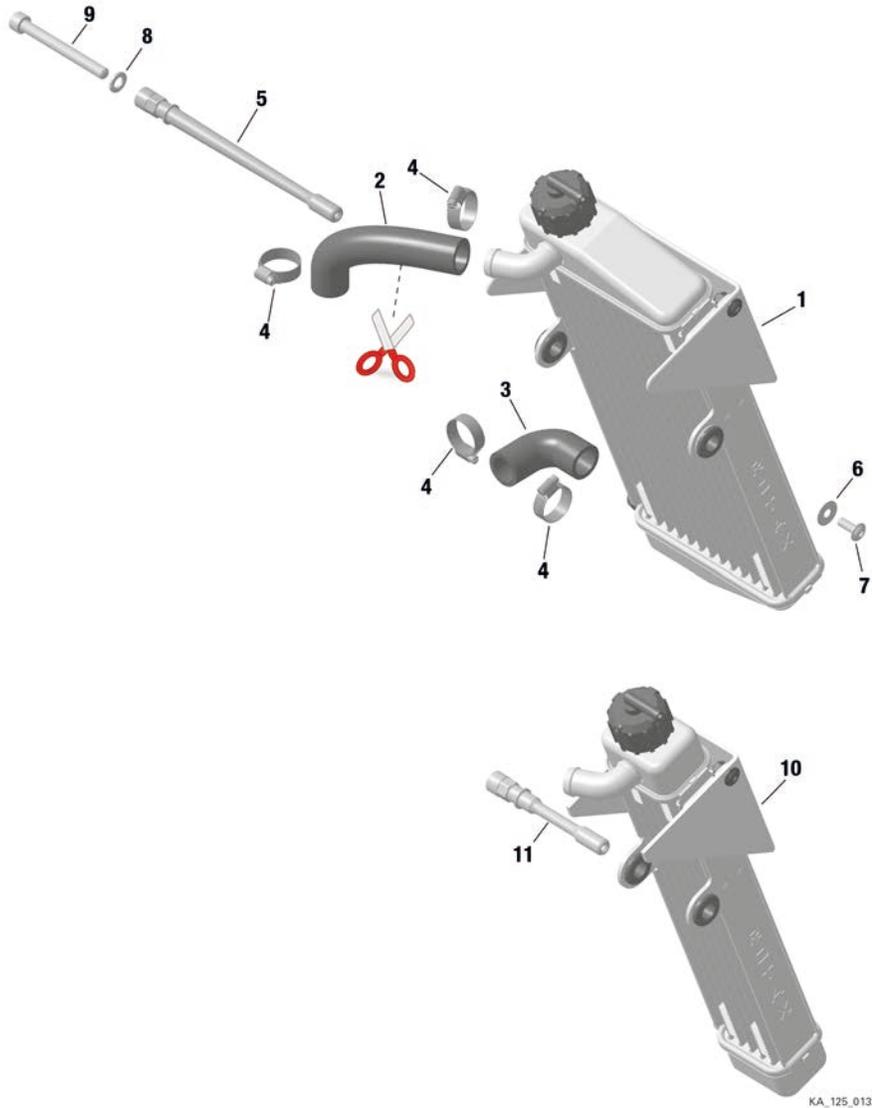


Figure 5.1

- | | | | |
|----|---|----|---|
| 1 | Large radiator | 2 | Upper coolant water hose |
| 3 | Lower coolant water hose | 4 | Clamp 16–25 |
| 5 | Radiator bracket | 6 | Washer |
| 7 | Allen screw with rounded flange head | 8 | Lock washer |
| 9 | Allen screw | 10 | Small radiator (125 Micro MAX evo only) |
| 11 | Radiator bracket (125 Micro MAX evo only) | | |

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INSTALLATION INSTRUCTION

INSTALLATION OF THE RADIATOR

ATTENTION	
<p>Warrant the best possible engine cooling. Ensure that the air stream covers the complete radiator area.</p>	

Step	Procedure
1	Pre-mount radiator with cooling hoses and radiator support as shown.

NOTE

The large radiator (pos. 1) has a filling capacity about 0.7 l and fits to engine types 125 MAX evo, 125 Junior MAX evo and 125 Mini Max evo.

The small radiator (pos. 2) has a filling capacity about 0.5 l and fits to engine types 125 Mini Max evo and 125 Micro MAX evo.

The installation of both radiators is similar.

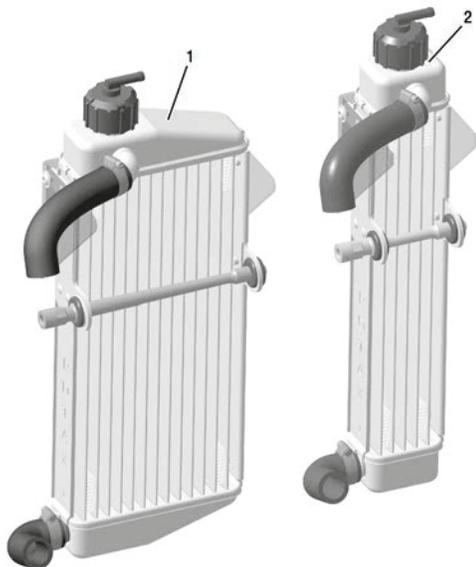


Figure 5.2

Step	Procedure
2	Attach the pre-assembled radiator to the engine with Allen screw M8x75 (pos. 1) and washer (pos. 2).

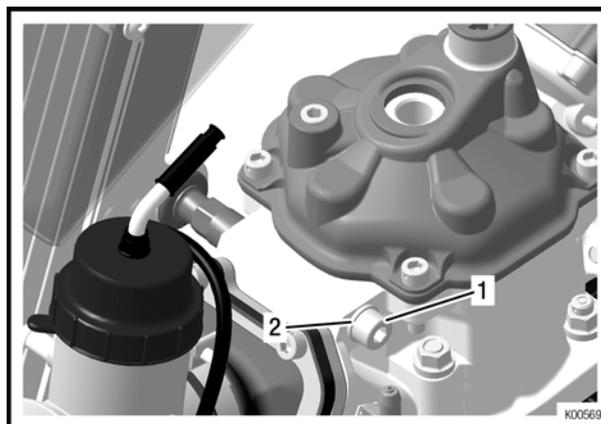


Figure 5.3

- 1 Allen screw M8x75 2 Washer

Step	Procedure
3	Attach the pre-assembled upper coolant hose to the engine using 1 hose clamp (pos. 3).

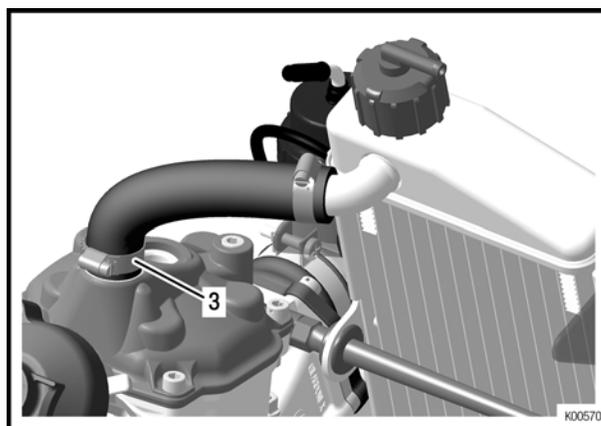


Figure 5.4

- 3 Hose clamp 16–25

Step	Procedure
4	Attach the pre-assembled lower coolant hose to the engine using 1 hose clamp (pos. 4)..

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NOTE

The length of the upper and bottom hose is supposed to be different, but equal at delivery. Therefore, cut the bottom hose using scissors or a knife.

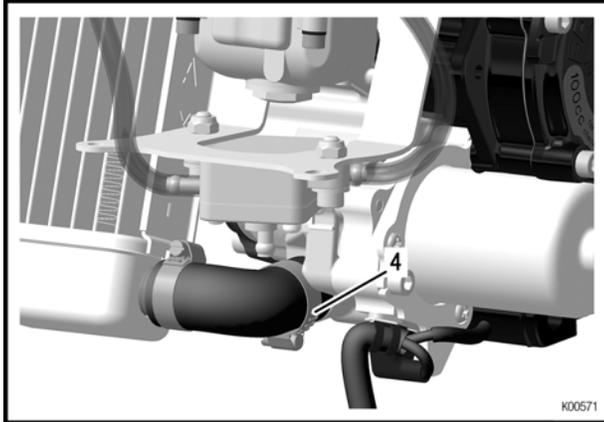


Figure 5.5

4 Hose clamp 16–25

BRP-Rotax
INSTALLATION INSTRUCTION

INTAKE SILENCER

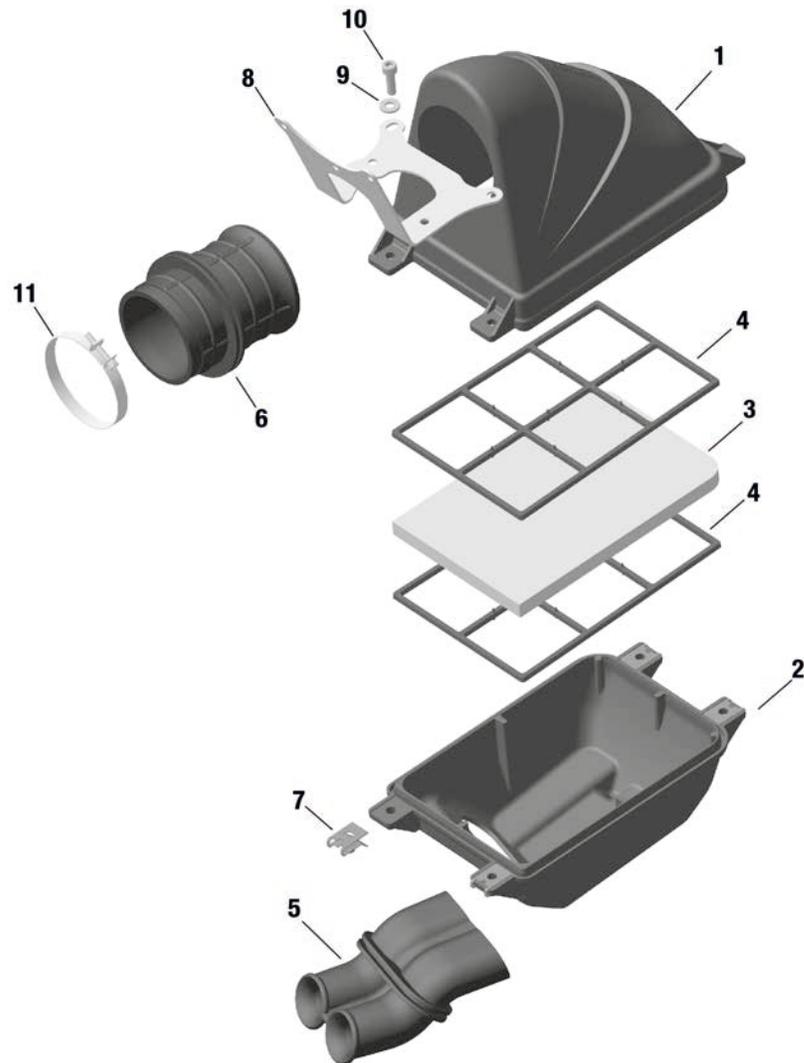


Figure 5.6

- | | |
|-----------------------------|--------------------------------|
| 1 Intake silencer case, top | 2 Intake silencer case, bottom |
| 3 Filter element | 4 Holder for filter element |
| 5 Intake silencer tube | 6 Carburetor socket |
| 7 Lock nut M6 | 8 Support bracket |
| 9 Washer 6.4 | 10 Allen screw M6x20 |
| 11 Clamp 50-70 | |

BRP-Rotax
INSTALLATION INSTRUCTION

**INSTALLATION OF THE INTAKE
SILENCER WITH INTEGRATED
AIRFILTER**

Step	Procedure
1	Install the rubber intake pipe (pos. 5) in a vertical position into the bottom half (pos. 2) of the intake silencer so that the rounded intake openings point outwards.
2	Fit the carburetor socket (pos. 6) into the top half of the intake silencer case (pos. 1) so that the arrow on the socket points towards the carburetor.
3	Install the filter element (pos. 3) with holders (pos. 4) into the bottom half of intake silencer (pos. 2).
4	Assemble bottom half of intake silencer case (pos. 2) with top half (pos. 1) as shown in the following figure. Make sure that the locking is inter-locked properly.
5	Attach the intake silencer with the supplied hose clamp (pos. 11) to the carburetor.

NOTE

The carburetor socket (pos. 6) is asymmetrical and can be turned so that the best possible position between carburetor and intake silencer can be achieved.

Step	Procedure
6	Attach the intake silencer on the support bracket (pos. 8) using 2 Allen screws M6x20 (pos. 10) with washers (pos. 9) and nuts (pos. 7).

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INSTALLATION INSTRUCTION

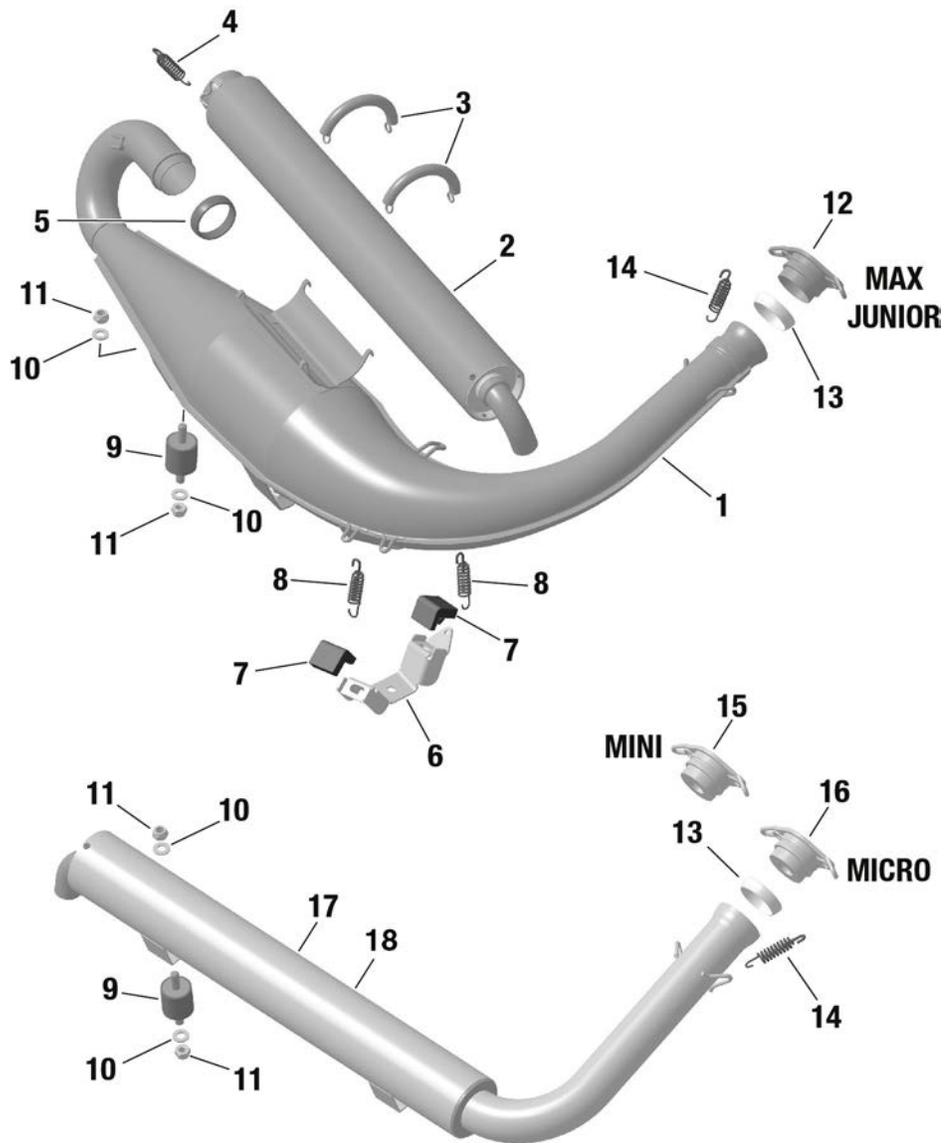
Chapter: 5
EXHAUST SYSTEM

TOPICS IN THIS CHAPTER

Installation of the exhaust system4

BRP-Rotax

INSTALLATION INSTRUCTION



KA_125_0131_a

Figure 6.1

- | | |
|---|---|
| <p>1 Exhaust system (125 MAX evo, 125 Junior MAX evo, 125 MINI MAX evo)</p> <p>3 Tension spring</p> <p>5 Exhaust gasket</p> <p>7 Rubber buffer</p> <p>9 Rubber buffer</p> | <p>2 Silencer assy.</p> <p>4 Spring stainless</p> <p>6 Retaining plate</p> <p>8 Spring stainless</p> <p>10 Washer 8.4</p> |
|---|---|

BRP-Rotax INSTALLATION INSTRUCTION

-
- | | | | |
|----|---|----|--|
| 11 | Lock nut M8 | 12 | Exhaust socket assy. (125 MAX evo, 125 Junior MAX evo) |
| 13 | Exhaust gasket | 14 | Spring stainless |
| 15 | Exhaust socket assy. (125 Mini MAX evo) | 16 | Exhaust socket assy. (125 Micro MAX evo) |
| 17 | Exhaust system (125 Micro MAX evo) | 18 | Exhaust system (125 Mini MAX evo), similar to Micro MAX evo but not the same |

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INSTALLATION INSTRUCTION

INSTALLATION OF THE EXHAUST SYSTEM

Tools required:

- Open-end wrench 13 mm
- Spring hook

NOTE

On the underside of the exhaust system, two different mounting mechanisms are provided. At the front, the assembly is carried out with rubber buffers (pos. 7) between the retaining plate (pos. 6) and the exhaust system and attached by extension springs (pos. 8). At the rear, the exhaust system is mounted directly using a rubber mount M8 (pos. 9).

ATTENTION

A rigid suspension of the exhaust system could result in fractures in the exhaust system.

Step	Procedure
1	Attach the heat-resistant rubber mount (pos. 9) to the two support lugs on the underside of the tuned exhaust.
2	Arrange the chassis-specific supports so that the exhaust system follows the straightest possible course from the exhaust socket on the cylinder to the muffler.
3	The gasket (pos. 13) is the only sealing between engine and the exhaust system. Additional heat-resistant LOC-TITE is not necessary anymore.

NOTE

All engine types have the same gaskets.

NOTE

A leakage in the exhaust system may lead to performance loss.

Step	Procedure
4	Secure the exhaust system on the ball joint using the two supplied exhaust springs (pos. 14).

NOTE

For easier installation use the special tool "Spring hook" part no. 251680.

ATTENTION

Do not over-stress the springs when fitting them.

Step	Procedure
5	Attach the exhaust system on the chassis supports such that the sealing of the ball joint between cylinder and exhaust system will not be impaired.

Exhaust socket dimensions:

Engine type	Exhaust socket ø
125 MAX evo	Ø 37 mm / 1.46 in.
125 Junior MAX evo	Ø 37 mm / 1.46 in.
125 Mini MAX evo	Ø 20 mm / 0.79 in.
125 Mini MAX evo MY20	Ø 22 mm / 0.87 in.
125 Micro MAX evo	Ø 18 mm / 0.71 in.

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INSTALLATION INSTRUCTION

Chapter: 6
INSTALLATION OF THE ACCESSORIES

TOPICS IN THIS CHAPTER

Installation of mounting plate	2
Fitting of the spark plug.....	3
Installation and connection of the RAVE control unit	4

BRP-Rotax INSTALLATION INSTRUCTION

INSTALLATION OF MOUNTING PLATE

NOTE

The retaining plate, the mounting plate, the solenoid valve (except engines without exhaust slide) and the ignition coil are already pre-assembled.



Figure 7.1

Variant 1: Engines without exhaust slide

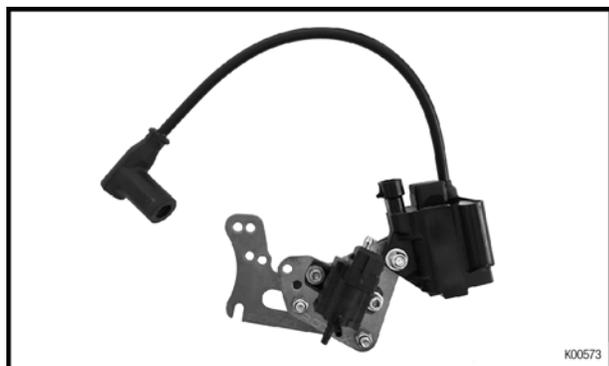


Figure 7.2

Variant 2: Engines with exhaust slide

Step	Procedure
1	Install mounting plate to crankshaft housing (pos. 4) using 2 Allen screws M6x20 (pos. 1), washers (pos. 2) and lock nuts M6 (pos. 3).

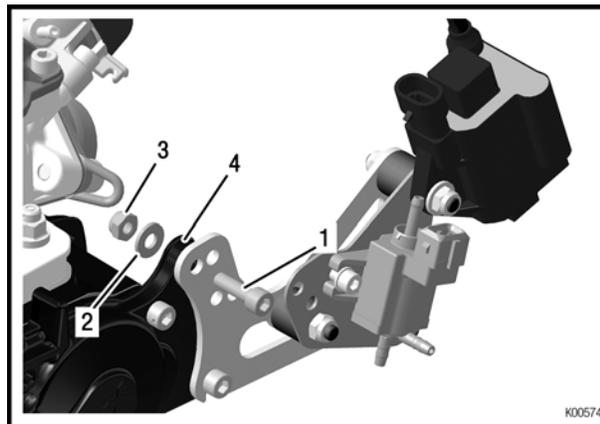


Figure 7.3

- 1 Allen screws M6x20 2 Washer 6.4
- 3 Lock nut M6 4 Crankshaft housing

NOTE

The position of the mounting plate may vary (depending on the engine type and position of the seat stay).

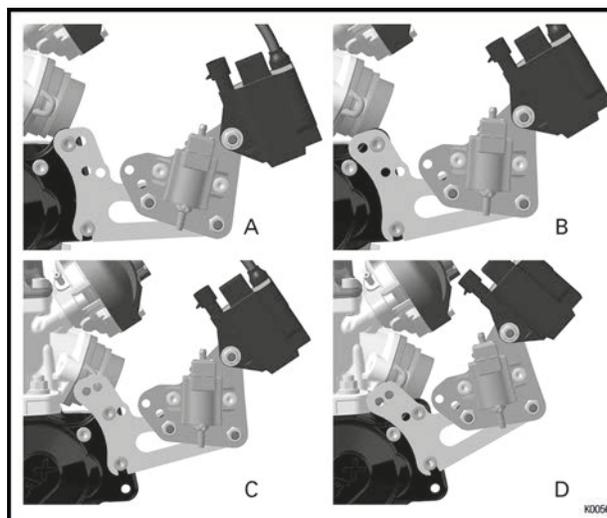


Figure 7.4

Position of the mounting plate

BRP-Rotax INSTALLATION INSTRUCTION

FITTING OF THE SPARK PLUG

The engine will be supplied with a spark plug.

Tools required:

- Feeler gauge
- Socket 21 mm
- Torque wrench

Step	Procedure
1	Remove the transport plug from the cylinder head.
2	Check electrode gap of spark plug. Adjust as required.

NOTE

Check technical regulations to assure conformity when setting the electrode gap.

Step	Procedure
3	Fit supplied spark plug (pos. 1) and tighten 25 Nm (221 lbf in) to 27 Nm (239 lbf in).
4	Install the spark plug connector (pos. 2), ensure correct engagement.

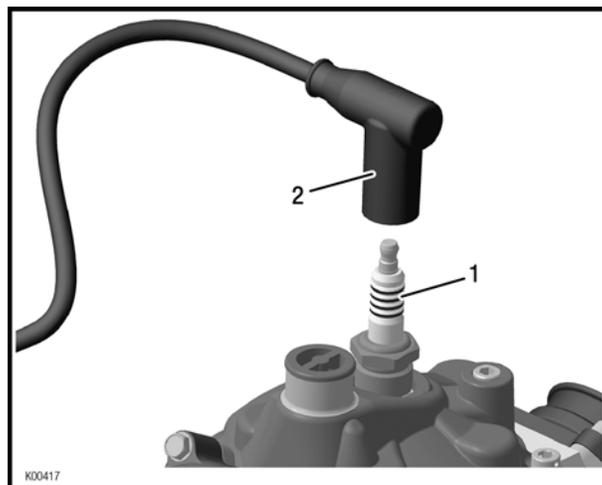


Figure 7.5

1 Spark plug

2 Spark plug connector

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INSTALLATION INSTRUCTION

INSTALLATION AND CONNECTION OF THE RAVE CONTROL UNIT

NOTE

The hose package of the RAVE control is already pre-assembled.

NOTE

The impulse restrictor is offered optionally.

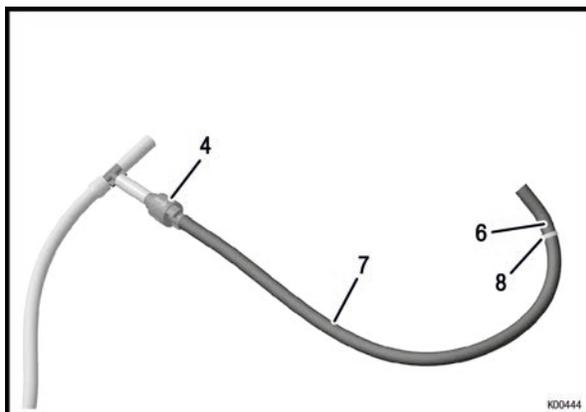


Figure 7.7

- 4 Check valve
- 6 Impulse nozzle
- 7 Pressure line
- 8 Tie wrap small

Step	Procedure
1	Insert impulse nozzle (pos. 6) about 25 mm into the 420 mm pressure line (pos. 7) using an Allen key SW4. Pay attention to the mounting direction! It also works without an impulse nozzle, this only serves to choke the opening of the exhaust valve.

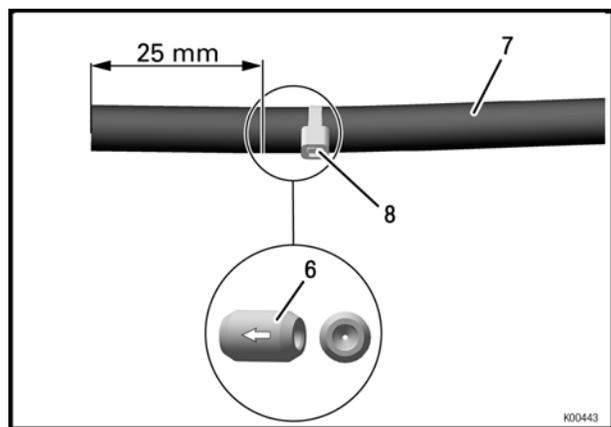


Figure 7.6

- 6 Impulse nozzle
- 7 Pressure line
- 8 Tie wrap small

NOTE

In order to prevent the displacement of the impulse nozzle (pos. 6), a small cable tie (pos. 8) should be attached directly afterwards to the pressure line. Do not tie up the pressure line completely!

Step	Procedure
2	Attach the end of the T-fitting (pos. 1) to the bottom of the fuel pump (pos. 2).

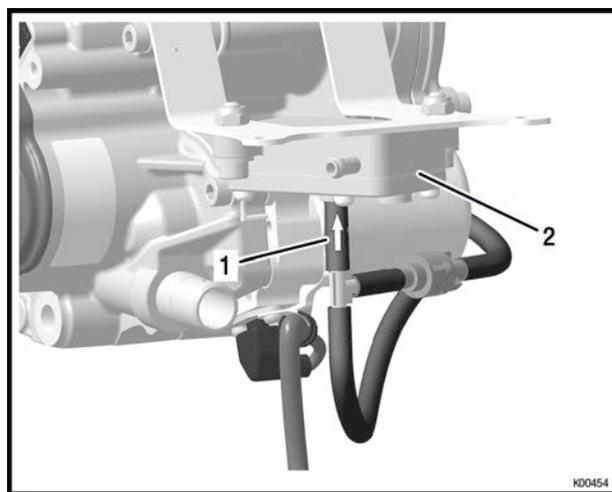


Figure 7.8

- 1 T-fitting
- 2 Fuel pump

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Step	Procedure
3	Attach the fuel line (pos. 1) to the impulse nipple on the engine housing and secure the line with tie wrap (small) (pos. 2).

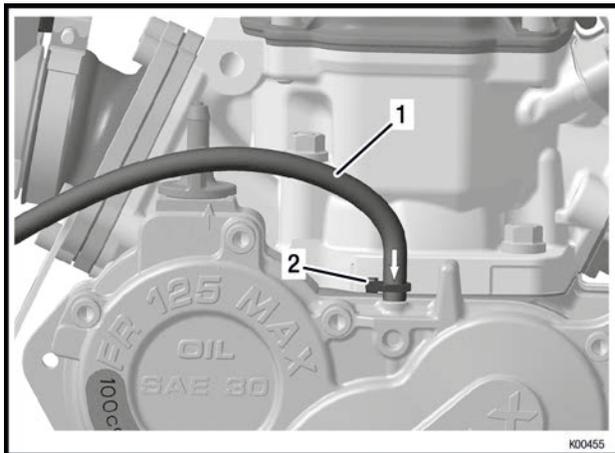


Figure 7.9

- 1 Fuel line 2 Tie wrap (small)

Step	Procedure
4	Attach the black hose of the hose package (pos. 1) to the metal connector (pos. 2) of the magnetic valve.

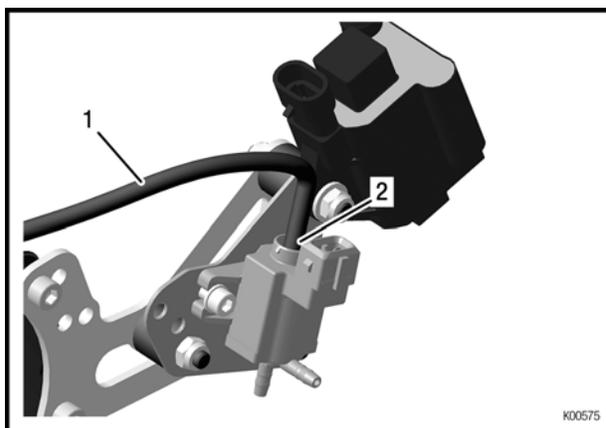


Figure 7.10

- 1 Hose package 2 Metal connector

Step	Procedure
5	Fix another tie wrap (pos. 1) at the fixing point (bore) on the engine housing. Secure both lines with tie wrap (pos. 3), ensuring that the black hose (pos. 2) is on top.

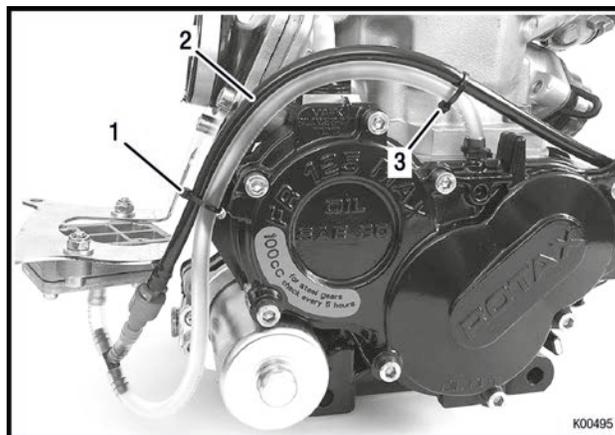


Figure 7.11

- 1 Tie wrap 2 Black hose
3 Tie wrap

Step	Procedure
6	Attach the 280 mm pressure line (pos. 1) to the exhaust valve (pos. 2) and to the magnetic valve (pos. 3). Secure the pressure line on the magnetic valve with a tie wrap (pos. 4).

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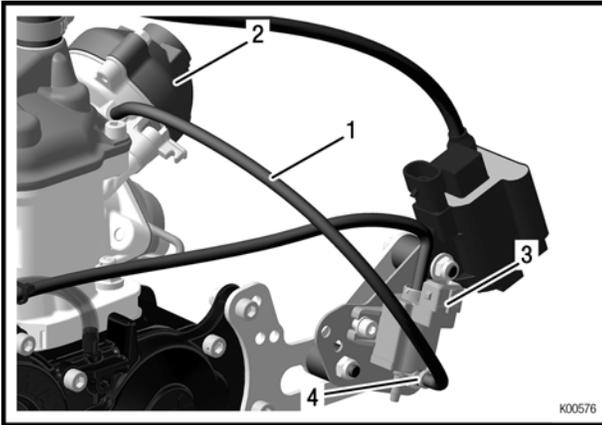


Figure 7.12

- | | |
|------------------|-----------------|
| 1 Pressure line | 2 Exhaust valve |
| 3 Magnetic valve | 4 Tie wrap |

BRP-Rotax
INSTALLATION INSTRUCTION

Chapter: 7
FINISHING WORK

TOPICS IN THIS CHAPTER

Check oil level in gear box.....	2
Fitting of the drive chain.....	3
Venting of the gear compartment	4
Run-in procedure	5

NOTE

NOTE

To warrant engine operation within temperature limits of the coolant, a temperature sensor for observation of the coolant temperature is required.

NOTE

Refer to Operators Manual for operating limits.

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INSTALLATION INSTRUCTION

CHECK OIL LEVEL IN GEAR BOX

The gear box is already filled with the appropriate amount of oil 100 CC (0.026 gal.) by the engine manufacturer. However, before the engine is installed in the frame, the oil level must be verified or replenished.

Step	Procedure
1	Place engine on a horizontal surface and/or assembling trestle.

NOTE

To measure the oil level exactly, drain the gear oil and determine it using a measuring cup.

Step	Procedure
2	Loosen Allen screw (pos. 1) with gasket ring (pos. 2) and absorb the leaking oil in a measuring cup. If necessary, remove the air vent screw (pos. 3) to ensure a better oil drain.
3	Determine the gear oil using the measuring cup.

NOTE

Oil capacity at new filling is 100 cc (0.026 gal).

NOTE

Specification of gear oil: engine oil SAE 15W-40.

Step	Procedure
4	Tighten the Allen screw (pos. 1) with new gasket ring (pos. 2) to 10 Nm.
5	Replenish new gear oil in the air vent hole.
6	Hand-tighten the air vent screw (pos. 3).

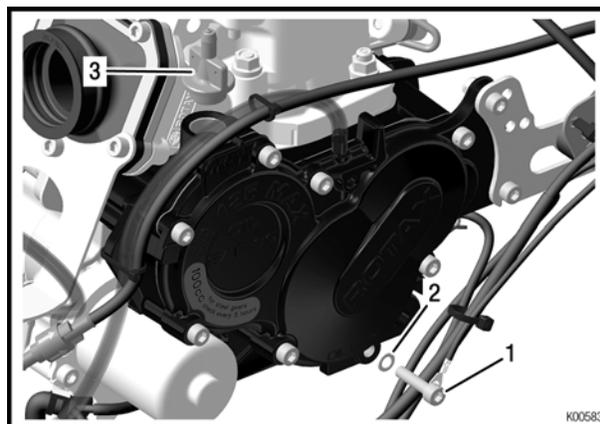


Figure 8.1

- 1 Allen screw
- 2 Gasket ring
- 3 Air vent screw

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INSTALLATION INSTRUCTION

FITTING OF THE DRIVE CHAIN

The required length of the drive chain depends on chassis and transmission ratio and the chain is therefore not included in the engine's scope of supply.

ATTENTION

BRP-Rotax recommends O-ring drive chains by ROTAX Premium.

Step	Procedure
1	Use a chain with the length corresponding to the selected transmission ratio of dimension 7.75 x 4.6 x 4.5.
2	Place the chain on the sprocket on the clutch and on the sprocket on rear axle.
3	Verify chain alignment between front and rear chain sprocket with a straight edge. Correct as required by shifting sprocket adapter along rear axle.

ATTENTION

Pay attention to chain alignment as advised by chassis manufacturer.

Step	Procedure
4	Establish required chain tension (Sag = +/- 5 mm / +/- 0.20 in.) by shifting the engine. NOTE <i>Use the engine stop screw to tension the chain.</i>
5	Fasten engine on the chassis.

⚠ WARNING

Non-compliance can result in serious injuries or death!

Besides the engine-specific installation advice, also take note of information from the respective chassis manufacturer.

This cover serves merely as splash protection against the grease on the drive chain, but is no protection against contact with the moving parts of the centrifugal clutch and the drive train!

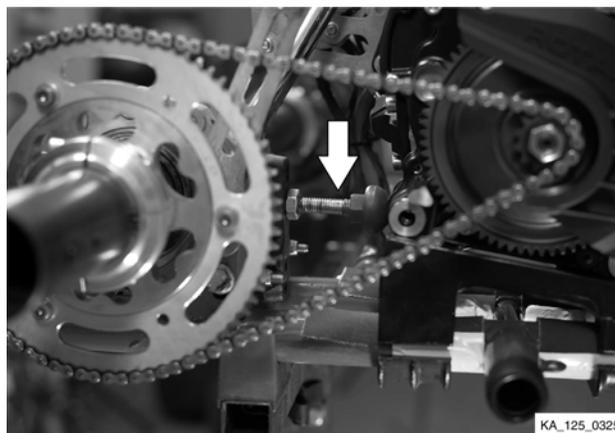


Figure 8.2: Chain tensioner

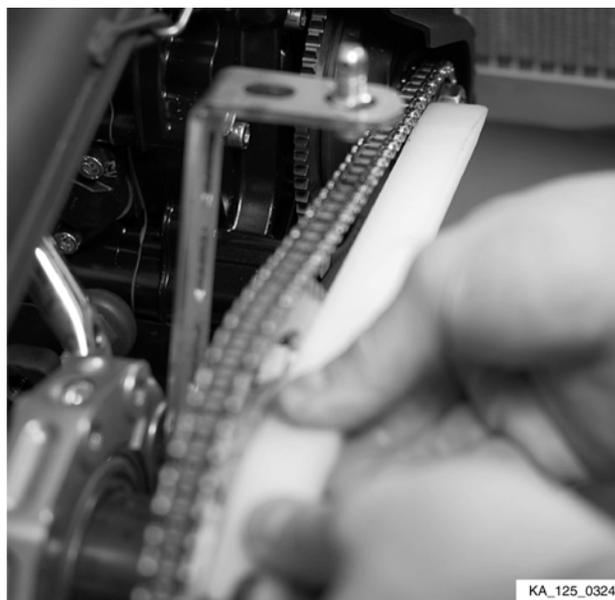


Figure 8.3: Engine alignment

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INSTALLATION INSTRUCTION

**VENTING OF THE GEAR
COMPARTMENT**

Step	Procedure
1	Remove cap from the venting screw.
2	Establish a connection between the venting screw and a collecting reservoir using a piece of the supplied fuel hose of an appropriate length.

NOTE

The venting hose must not reach all the way to the bottom of the collecting reservoir.

ATTENTION

Do not attach the venting hose on the bottom of the collecting reservoir, if only one reservoir is in use.

BRP-Rotax INSTALLATION INSTRUCTION

RUN-IN PROCEDURE

⚠ WARNING

Non-compliance may result in serious injuries or death!

Running-in has to be done with a "long" gear ratio and a rich main jet (2 sizes bigger than the recommended main jet based on altitude and temperature).

ATTENTION

For the first 10 liters of fuel use a mixing ratio of 1:33 (= 3% or 0.3 liter oil per 10 liters of fuel).

NOTE

BRP-Rotax recommends to use XPS Kart - Tec oil.

Step	Procedure
1	15 min. up to 10.000 rpm. 15 min. up to 12.000 rpm. 15 min. full load.
2	Reduce the main jet size step by step (e.g. 172 - 170 - 168 ...).

NOTE

Make sure that the coolant temperature reaches a minimum of 55 °C (130 °F).

At cold ambient temperature radiator needs to get partly covered by tape.

BRP-Rotax
INSTALLATION INSTRUCTION

NOTES

Notes

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INSTALLATION INSTRUCTION

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