



Operating Instructions

Hall-Effect RPM Sensing Cable

Legal Notice

Operating instructions for Hall-effect rpm sensing cable

Hella Gutmann Solutions GmbH

Am Krebsbach 2

79241 Ihringen

Web: www.hella-gutmann.com

Mail: info@hella-gutmann.com

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Editorial date: 04/2010

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A Safety notes

1 General safety notes



- The Hall-effect rpm sensing cable is only determined for the use on motorcycles. Precondition for the use of this system is profound knowledge of motorcycle engineering and also the knowledge of sources of danger and hazards in the workshop or rather on the motorcycle.
- Completely and thoroughly read the operating instructions before using the Hall-effect rpm sensing cable.
- All notes given in the individual sections of the instructions are in effect. On principle it is required to follow the undermentioned steps and safety guidelines.

The following points are merely an abridgement, which shall not restrict all other safety precautions.

2 Safety notes for Hall-effect rpm sensing cable



In order to avoid incorrect handling and injury of the user or destruction of the sensing cable arising from this, pay attention to the following:

- Trainees are allowed to use the Hall-effect rpm sensing system only under supervision.
- Protect the tool from liquids like water, oil or fuel (it is not waterproof).
- Protect the device from strong impacts (do not drop).
- Protect the tool from rotating parts.
- Protect the connecting cable from hot components.
- Regularly check the connection cables/accessory parts for damage (danger of tool destruction due to short circuit).
- Regularly check the cables of high-voltage components for damage (marten damage etc.).

3 Safety precautions regarding high voltage:



The Hall-effect rpm sensing cable picks off the rpm on high-voltage ignition components (e.g. ignition coil). Disregarding the safety notes can lead to severe injuries or even death. Therefore regard the following:

- Regularly check the cables of high-voltage components for damage (marten damage etc.).
- Do not touch energised components when working on the running engine.

- Regularly check the Hall-effect rpm sensing and adapter cable for the diagnostic tool for damages.
- Only use original parts.

4 Safety precautions regarding the danger of suffocation



Carbon monoxide is arising with running engine. This leads to hypoxia in blood if inhaled (danger to life!). Therefore regard the following:

- Ensure sufficient aeration of workspace.
- Cut in and connect exhaust extraction system when engine is running.

5 Safety precautions regarding the danger of burning



If the engine is running, some components can become very hot (up to several 100 °C). Therefore regard the following:

- Always use safety equipment (gauntlets etc.).
- Do not run access lines near hot components.

6 Safety precautions regarding the danger of injury



During working on the vehicle there is a danger of injury through rotating components or inadvertent rolling of vehicle. Therefore regard the following:

- Do not reach into rotating components when engine is running.
- Prevent inadvertent rolling of the motorcycle.
- Do not run cables near rotating parts.

B Product description

1 Normal use

Hall-effect rpm sensing enables to determine the idle rpm without sophisticated adaptations and to display it with a Hella Gutmann-diagnostic tool.

The Hall-effect rpm sensing cable can be used on ignition coils, single-spark coils, camshaft sensors and other components, which create a magnetic field depending on the rpm.

The Hall sensor inside the cable registers the magnetic field emitted by these components and thereof calculates the engine rpm.

2 Delivery contents



Hall-effect rpm sensing

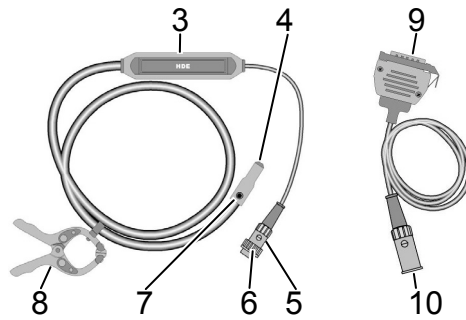


Adapter cable for the diagnostic tool

Contents of delivery:

	Item	Amount
1	Hall-effect rpm sensing	1
2	Adapter cable for diagnostic tool (not with emission analyser)	1
3	Operating Instructions	1

3 Tool description



Hall-effect rpm sensing

Adapter cable for the diagnostic tool

	Item
3	Analysis electronics
4	Sensor for rpm sensing
5	HDE connection for adapter cable (10)
6	Union nut for fastening the connections
7	Adjustment mark for adjusting the sensor
8	Fastening clamp for Hall-effect rpm sensing cable to the motorcycle
9	RS232 connection for diagnostic tool RS232 port
10	Adapter cable connection for Hall-effect rpm sensing connection (5)

C Connection and measurement

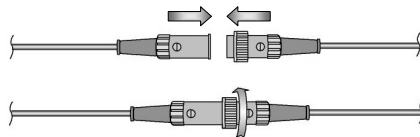
1 Hall-effect rpm sensing connection to the diagnostic tool

1.1 Preconditions

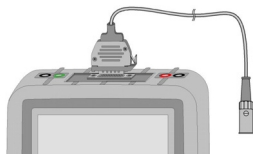
- Engine component with sufficient magnetic field strength
- Engine component without damages
- Engine component accessible
- Faultless engine operation
- Steady idle rpm
- Diagnostic tool with rpm pickoff function

1.2 Connecting the cable to the diagnostic tool

1. Connect the Hall-effect rpm sensing connection (5) to the adapter cable (10) or to the trigger line of the emission analyser and fasten it with the union nut (6).



2. Connect the diagnostic plug of the adapter cable (9) to the diagnostic tool.



3. Switch on the tool.
4. Select the rpm pickoff function on the tool.
5. Start the engine.



WARNING!

Electric high voltage in ignition components!

Severe injuries or even death in case of electric shock!

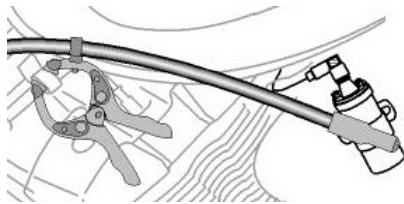
Do not touch energised components when working on the running engine!

**CAUTION!****Risk of injuries through rotating parts!**

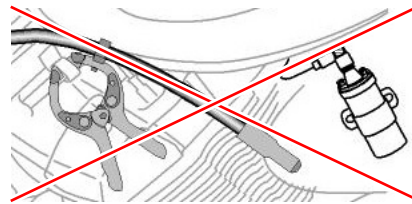
During working on the vehicle there is a danger of injury through rotating components!

- Do not reach into rotating components when engine is running!
- Do not run cables near rotating parts!

6. Apply the Hall-effect sensor (4) to any of the engine components (here ignition coil).



Correct: Sensor in direct contact to ignition coil



Wrong: Sensor near the ignition coil

The diagnostic tool shows the rpm.

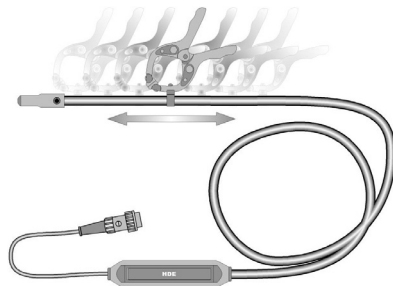
**NOTE**

The rpm indication requires the adjustment mark (7) directly at the engine component.

7. Fasten the Hall-effect rpm sensing cable (1) with the fastening clamp (8) at a suitable point.



Now move the fastening clamp with the ring.



You can now start with the diagnostic work.

2 Troubleshooting

The following list shall help you to repair smaller problems yourself. Therefore select the suitable problem description and check or rather carry out the steps one after the other listed under **Solution** until the problem is solved.

Problem	Reason	Solution
Wrong rpm value	<ul style="list-style-type: none"> Interference of magnetic fields through other components 	<ul style="list-style-type: none"> Do the manual rpm adaptation with the diagnostic tool. Readjust the sensor Increase the sensor distance to the adjacent engine components.
	<ul style="list-style-type: none"> Faulty cable/cable connections. 	<ul style="list-style-type: none"> Check the cables/cable connections for faults.
No rpm	<ul style="list-style-type: none"> Only insufficient magnetic field around the engine components. 	<ul style="list-style-type: none"> Readjust the sensor Apply the sensor to another component. Repair the engine system.
	<ul style="list-style-type: none"> Faulty cable/cable connections. 	<ul style="list-style-type: none"> Check the cables/cable connections for faults.
	<ul style="list-style-type: none"> Defect diagnostic tool. 	<ul style="list-style-type: none"> Get the diagnostic tool repaired.
	<ul style="list-style-type: none"> Defect Hall-effect rpm sensing cable. 	<ul style="list-style-type: none"> Replace the Hall-effect rpm sensing cable.

D General information

1 Maintenance and care

As every measuring tool, HDE should also be handled with care. Therefore regard the following:

- Check all cables/accessories for damage before use.
- Clean all parts afterwards with a dry lint-free cloth.
- Always wind the Hall-effect rpm sensing cable and the adapter cable carefully.
- Only use original spare parts.

2 Disposal

In compliance with directive 2002/96/EG of the European Parliament and Council of 27 January 2003, relating to used electrical and electronic appliances, and the national statute governing the distribution, return and environmental disposal of electrical and electronic appliances (Waste Electrical and electronic Equipment (WEEE) regulation) of 16 March 2005, we undertake to take back and to dispose this device, distributed after 13 August 2005, at the conclusion of its service life.

Since, in the case of the present device, this relates to an exclusively commercially used instrument (B2B), it must not be handed over to a public disposal facility.

Subject to the provision of the date of purchase and the tool number, this tool can be disposed of by:

Hella Gutmann Solutions GmbH

Am Krebsbach 2

79241 Ihringen

WEEE-reg.-no. DE25419042

Tel.: +49 (7668) 9900 - 0

Fax: +49 (7668) 9900 - 3999

Mail: info@hella-gutmann.com

Hella Gutmann Solutions GmbH
Am Krebsbach 2
D-79241 Ihringen
Web: www.hella-gutmann.com
Mail: info@hella-gutmann.com
