





Verze 20.0

Equipment for
Motorcycle Repair
Shops and
Tuning Centers
FOR / FROM
Professionals







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Professional diagnostics & tuning tool for workshops and tuning centers

Serial diagnostics - HW

HARLEY-DAVIDSON® & BUELL®, BMW®, INDIAN® & VICTORY®

Version 20.0

Our aim is to provide the user of **DIAG4BIKE** with a diagnostic tool that is comparable to the original diagnostic equipment for the brands in terms of common diagnostic operations.

It enables the user to perform diagnostics of electronic fuel injection modules and others (i.e. security modules, ABS etc.) through the diagnostic connector on the vehicle. The kit contains a **communication interface** with the necessary **adapter**(s), a **USB cable** for connection to your laptop (or PC) and **diagnostic software** that is compatible with **Windows 7, 8.1** and 10. There is also a wireless **Bluetooth version** of the communication interface available.







Reference	ZODIAC	ACTIA CZ
Communication interface USB	732050	AT532 5006
Communication interface USB+BT	732051	AT532 5007
Software *) HARLEY-DAVIDSON®	732056	AT531 5049
2) Software *) BMW®		AT531 5089
Software *) Indian® & Victory®	732043	AT531 5051

^{*)} includes adapters

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SALE REPRESENTATIVE MATERIAL

Serial diagnostics - SW

HARLEY-DAVIDSON® & BUELL®

Version 20.0

Includes functions to perform diagnostics of electronic fuel injection modules and others (i.e. security modules, ABS etc.) through the diagnostic connector on the motorcycle. The kit contains a communication interface with a **Harley-Davidson**® adapters, a **USB cable** for connection to your laptop (or PC) and **diagnostic** software that is compatible with **Windows 7, 8.1** and Bluetooth version of the communication interface available.

Motorcycle diagnostics for model year 2020 and older

- Overview of the Harley-Davidson® models
 All models since 1995 (Delphi, Magneti Marelli, VDO IGN, Thunder MAX EFi)
- Overview of control units that can be diagnosed and functions

Ignition Module

EFI (Electronic Fuel Injection Module)......All models

TSSM (Turn Signal Security Module)......Key FOB with button

HFSM (Hands Free Security Module).....Key FOB without button

BCM (Board Control Module).....Key FOB without button

SCM (Security Control Module)

Gauges (Speedo, Tacho and Instrument Module).....All models

ABS Module (Delphi + CAN models)......All models

Radio, Thunder MAX EFI (models with 4-pin Datalink connector)

Read and Clear Diagnostic Trouble Codes.....All models, updated trouble codes, parameters and texts Limits of measured parameters

Read Identification data (parts number, VIN number).....All models

Monitoring real-time data (throttle position, temperature, oxygen sensors, turn signals etc.)

Test actuators (injectors, coils, main relay, fuel pump, idle, turn signals, tachometer, lamps etc.)

Buell diagnostics is incorporated in Harley-Davidson diagnostics

Unit of measure selection metric/american

Communication interface is CAN ready (models with 6-pin Datalink connector)

Motorcycle report (search for and identify all embedded control units, read fault code memory, erase fault code memory by one button, generate and print a diagnostic report, odometer reading, the diagnostic report is printed into pdf file after successful motorcycle report).





Reference: ZODIAC: 732056 ACTIA CZ: AT531 5049







Professional diagnostics & tuning tool for workshops and tuning centers

Serial diagnostics - SW

HARLEY-DAVIDSON® & BUELL®

Version 20.0

Toolbox (special functions in one place with description of the functions)

Module replacement (TSSM, HFSM, BCM)

ABS Service (Bleeding and configuration, Delphi + CAN models)

ACR (Automatic compression release during starting)

Cruise Control, Exhaust actuator, EITMS (enable/disable)

Side Stand Switch configuration - All models

Intake solenoid valve configuration on CAN models (6-pin Datalink connector)

Chassis Fan Cooler configuration (enable/disable)

Rider Assistance - ABS, Traction Control configuration

Radio customization (all models including)

RADIO BOOM! ™ BOX GTS 2019 - Speaker Configuration, Radio region code, Digital Audio

Broadcast, Rear Speaker switch installed, Navigation, TPMS (Tyre Pressure Monitoring System),

Audio input 1 2 and 3, CB Radio, CB Frequency, Intercom, WHIM (Wireless Headset Interface Module),

Bluetooth, Apple CarPlay Mic Type, Apple Siri, SMS Text Messaging,

Front Audio Output, Rear Audio Output

Custom Audio Flash - J&M Corporation (Audio Flash Stage 5)

ABS Telltale configuration on CAN models

Radio pairing, Buell TPS adjustment, Speedo pairing (CAN models)

Reset AFV (all models and Buell®)

Oil Cooler Fan (enable/disable)

Idle speed adjustment - all models with Delphi Electronic Fuel Injection Module up to 2017

for models 2018-19 is idle speed adjustment available in advanced or professional tuning

TSSM Customization......PIN read/change, Auto arming disable/enable, Key FOB assignment instruction

HFSM Customization......Key FOB assignment/replacement, PIN read/change,

disable/enable: Auto arming, Sidecar, Service mode

BCM Customization......External Bank Angle sensor, Auxiliary/Fog light Operation, etc.

Updated Key FOB assignment/replacement, PIN read/change,

disable/enable: Auto arming, Sidecar, Service mode, Lights configuration,

Keyless ignition

Front and rear turn signal (LED/Incandescent)

EBAS (External Bank Angle Sensor) - no EBAS / FLHTCUTG / FLRT

Power Lock Switch for Saddle bags and Trunk (disable/enable)

Disarming (HFSM/BCM module)......PIN read/FOB assignment on armed bike

(for BCM modules a CAN disarming cable is needed)

TPMS configuration BCM, Speedo, Radio

TPMS valve assignment

Fork Lock Switch configuration

Wireless Headset configuration

Odometer units settings KM / MIL - All models

Button with a direct link to the On Line Help (www.doc4bike.eu)

Displaying battery voltage

Demo version - Available for download on the product website

CAN disarming cable PWR

Reference: ZODIAC: 732049 ACTIA CZ: AT531 4028







SALE REPRESENTATIVE MATERIAL

Serial diagnostics - SW

INDIAN® & VICTORY®

Version 20.0

Includes functions to perform diagnostics of all embeded control units through the diagnostic connector on the motorcycle. The kit contains a communication interface with a **INDIAN® & VICTORY®** adapter, a **USB cable** for connection to your laptop (or PC) and diagnostic software that is compatible with **Windows 7, 8.1** and **10**. There is also a wireless Bluetooth version of the communication interface available.

Motorcycle diagnostics for model year 2019 and older

Models

Indian – 2014 - 2019 (excepting model FTR) Victory – 2008 - 2017

Overview of control units that can be diagnosed and functions

Engine control module
ABS control module
Gauge (Speedo, Tacho ...) module
Vehicle control module
Radio control module

Read Vehicle information Reading / erasing errors Reading parameters



Motorcycle report

Search for and identify all embedded control units, read fault code memory + generate and print a diagnostic report

Software Kit included

Adapter Indian® & Victory® SW installation on USB disk SW licence code









Professional diagnostics & tuning tool for workshops and tuning centers

Engine tuning HARLEY-DAVIDSON®

TUNING STRATEGY

- The tuning system focuses on Harley-Davidson engines equipped with DELPHI EFI (diagnostic communication J1850 or CAN)
- ◆ The tuning system is based on diagnostic system DIAG4BIKE. DIAG4BIKE is the professional diagnostic tool for Harley-Davidson Motorcycles. The tuning software DIAG4TUNE is included in the diagnostic software from Version 12. To tune an individual motorcycle a TUNING DONGLE (or EASY TUNING DONGLE) must be purchased that can be used for that specific motorcycle. It is recommended to use last version of DIAG4BIKE software for diagnostic or tuning.
- The tuning process does not require the installation of additional component(s) or any motorcycle harness modification. Tuning is based on the modification of EFI Calibrations (software modification) exclusively via the diagnostic connector.
- The first step in Tuning is storage of the original EFI Calibration. The tuning operator can restore the original EFI Calibration at any time during tuning process (stock calibration).
- The tuning process is used to optimize Fuel Maps in case of any changes to the configuration of engine components or accessories (exhaust or/and intake system etc.)

AVAILABLE TUNING METHODS

1. ADVANCED TUNING

By this method of the tuning is possible to use full range of **DIAG4TUNE** functions. The method provides ability to use an embedded database of calibrations. These calibrations (maps) are pre-set for several configurations of exhaust and intake components (open exhaust, intake and combinations). Advanced tuning method provides important improvement of engine functions. The best engine efficiency is possible to rich only by using PROFESSIONAL TUNING method.

Necessary Tuning Components:











SALE REPRESENTATIVE MATERIAL

Engine tuning HARLEY-DAVIDSON®

2. PROFESSIONAL TUNING - engine fuel maps optimization

By this method of the tuning is possible to use full range of **DIAG4TUNE** functions. The key function is here VOLUMETRIC EFFICIENCY MAP MEASUREMENT under load. It means real VE maps measurement of each engine configuration. VE map measurement can be done on an appropriate Roller Station, good example is SMART POWER BENCH, or during Road Test on the street. Professional tuning method provides the best bike tuning for each special engine - maximal efficiency, torque and power.

Necessary Tuning Components:







AFR TUNING MONITOR

Reference ZODIAC: 732 044 ACTIA CZ: AT106 4016



Useful Tuning Components:

THROTLE CONTROL **LIMITER**

Reference **ZODIAC: 732 046** ACTIA CZ: AT531 4097



KIT-ADAPTER FOR **OPEN EXHAUST** (option)



Reference ACTIA CZ: AT106 4047



INSTALLATION SET LAMBDA

Reference: ZODIAC: 732 042 ACTIA CZ: AT106 4020

Blank ECM Flash

This function is used to flash a new blank ECM. By this function you can set a VIN number and after flash the selected calibration according to the VIN number. It can be also done for the used ECM. If this function is successful you can do full range of the DIAG4TUNE functions.

DIAG4BIKE

TUNING DONGLE



Reference

ACTIA CZ: AT531 4098





Models for tuning

and Blank ECM Flash - HARLEY-DAVIDSON®

Version 20.0

tuning is available for H-D® models 2006–2020

Advance	d tuning n	naps availabl	$^{ m ed}$ tuning maps available for H-D $^{ m @}$ models 2006–2020 (see $^{ m below}$)	020 (see below)
DIAG4BIKE® Maps	H-D®- SE Equivalent	Engines	Components	Note
Level 0		All	Stock Intake and Exhaust	Equal to Stock
Level 0 Plus		Milwaukee-Eight	Stock Intake and Exhaust	Driving Comfort increasing
Level 0,5		Evolution	Open Intake (KN, SE)	Transition Level 0-1
Level 1		All	Open Exhaust	
Level 1,5		Evolution	Open Intake and partly open Exhaust	Transition Level 1-2
Level 2	Stage 1	All	Open Intake and Exhaust (SE Components)	
Level 3	Stage 2	All	Camshaft, Open Intake and Exhaust (SE Components)	
Level Custom	Stage 3,4	All	Custom Configuration	Available On Demand

Only Level 0 and Level 2 are avalible for following models : XL883 L,N,R 2007-19 / XL883 P 2007-10 / Street® / Dyna®2006 / Dyna®2007-10 SE / V-Rod® 2006-07 except VRSCR, VRSCD / Softail® 2006 / Softail® 2007-13 SE / Touring® SE, CVO

Tuning of models Pan America®, Bronx®and LiveWire® is not available yet





Smart Power Bench

power bench for bike diagnostics and tuning

- SMART POWER BENCH (SPB) nd Generation (with gearbox)
 - The station may only be operated by a trained person
 - Simulates engine load equivalent to road test Gear 1
 - Simulates double load for comfortable tuning measurements (VE maps) Gear 2
 - Provides measurements for both power and torque curves Gear 1
 - Facilitates measurement of VE maps for engine tuning
 - Provides the opportunity to carry out engine diagnostics whilst under load
 - Utilises built-in fan for engine & rear tyre cooling
 - Embedded protection of rear tyre

SPB is an ideal tool for motorcycle specialists who carry out bike repairs and servicing, ECU diagnostics and especially engine tuning.

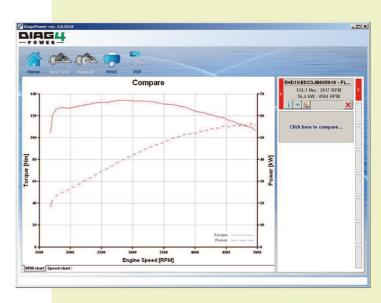
SPB gives you more than basic measuring capabilities.

It is able to simulate the engine load without the hazards associated with road tests, under both stable and dynamic conditions. Utilising a large roller with high moment of inertia & specially adapted fan assembly is equivalent to the motorcycle and rider mass and drag caused by air flow.

SPB is designed to complement the range of equipment available in the DIAG4BIKE family and is especially well suited for the tuning of Harley-Davidson engines.

DIAG4POWER is our new software program allowing full control of measurements with SMART POWER BENCH.















Smart Power Bench

power bench for bike diagnostics and tuning

SPB specifications

- Weight: 550 kg
- Dimensions: 2,8m x 0,5m x 1m (W x H x D), 110" x 20" x 40"
- Roller diameter: 450 mm, 18"
- Mass moment of inertia of the system: ~12 kgm2 (see label on SPB) Gear 1
- Measurement range of engine power: 10 250 kW

At load, power input of the fan is mainly given by the built-in load fan, and is dependent
on the engaged gear of the station (the following data is for illustration only):

Gear 1

- o 10 kW at 100 km/h (60 MPH)
- o 30 kW at 150 km/h (90 MPH)
- o 70 kW at 200 km/h (120 MPH)

Gear 2

- o 10 kW at 50 km/h (30 MPH)
- o 30 kW at 75 km/h (45 MPH)
- o 70 kW at 100 km/h (60 MPH)
- · Maximum driving speed (peripheral speed of the roller):
 - o Gear 1: 225 km/h, 140 MPH
 - o Gear 2: 110 km/h, 68 MPH
- · Connection to PC: RS 232 or USB
- Required PC operation system: W7, W8, W10
- Power supply of the station: 230V AC or 12V DC with power of 24 W.
 Power supply can therefore be provided from a 12V vehicle battery.
- The operating temperature range of the station: +10 to +40 °C
- Cooling of rear tire: provided automatically by the built-in fan
- Temperature measurement of the rear tire: IR measurement
- · Remote control: IR (infra red)
- Measuring ambient air pressure: 870 to 1100 hPa (at sea level)



Notable features of SPB

 Fast & Simple installation without the need for building works or anchorage

· Intuitive usage and simple maintenance

 Cost effective high quality solution produced 100% in Europe (product of the Czech Republic)







Smart Power Bench

Standard accessories

Intake air temperature sensor



-9°C to 70°C

Contactless infrared thermometer



0°C to 200°C measuring engine temperature measuring tire temperature

Software Diag4Power



Ignition sensor SPB



Speed Measurement



Clampingstraps for motorcycle

Footer adapter



Wireles inrared remote controller

Option



Trolley with PC for SPB



- Trolley
- · Industrial box PC with OS
- Monitor 21.5" with Touchscreen *)
- Ink color printer
- Keyboard and mouse
- *) Trolley with PC for SPB without Touchscreen

Reference

ACTIA CZ: AT857 5016 ; ACTIA CZ: AT857 5015 *)

Diag4Bike

Speed reading

Reference ZODIAC: 732056 ACTIA CZ: AT531 5049



Diagnostic and Tuning System DIAG4BIKE for H-D® It allows to read the engine parameters for power and torque measurement directly from the H-D® diagnostic connector (engine speed and temperature, TPS position, VIN number)

Additional motorcycle cooling



This powerful Axial Fan is useful equipment for additional engine cooling while using the Smart Power Bench. The fan is equipped with two power levels. Power levels are switchable between level 1, level 2 and auto. The Auto level is dedicated for Tuning Measurements (VE maps measurement). The Smart Power Bench automatically controls the power level of the fan dependent on engine temperature.

Refernce ACTIA CZ: AT131 4002 Level 1 - Electric Power 0.5 kW, Airflow 4 700 m3/h, Air speed 26 km/h

Level 2 - Electric Power 2 kW, Airflow 11 000 m3/h, Air speed 20 km/h

Transport wheels for SPB





ACTIA CZ: AT533 4074

Exhaust gas extractor

This powerful Radial Fan is designed for extraction of exhaust gases from motorcycles during power tests and during tuning measurements. The fan is equipped with adapters for one side and two side motorcycle exhaust pipe configurations. The fan output is connected to the hose diameter of 305 mm with a length of 3 m. Electric Power 3 kW, Airflow 6000 m3/h





a) One side exhaust pipe

diameter 250 mm



b) Duo sides exhaust pipe
 - diameter 2x200 mm



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Professional diagnostics & tuning tool for workshops and tuning centers

Parallel diagnostics

HARLEY-DAVIDSON® & BUELL®, BMW®

Parallel diagnostic equipment is designed for measuring input and output signals to and from the electronic control unit (ECU) which is typically used in modern vehicles to control engine functions. However, it can also be used for measurements on other control units installed in vehicles. Measurements can be carried out on a system that is in operation (i.e. a running engine).



VOLTMETER-BOX - option

The VOLTMETER-BOX is an accessory unit for the DIAG4BIKE communication interface. It is a 2-channel graphical voltmeter which can be used for independent measurement of DC voltage within a range of 0V to +39V.

Reference			ZODIAC	ACTIA CZ
3 Breakout diagnostic box 62P			732053	AT521 3037
Deriv (T-adapter) 36PT	H-D®	EFI Delphi	732054	AT531 4014
5 Deriv (T-adapter) 35PT	H-D®, BMW®	EFI MM	732055	AT531 4015
6 Deriv (T-adapter) 73PT	H-D®	EFI Delphi (Touring models)	732058	AT531 4064
7 Deriv (T-adapter) 12+4PT	H-D®	TSM/TSSM/HFSM	732059	AT531 4077
Deriv (T-adapter) 36/48PT	H-D®	всм	732048	AT531 4073
Deriv (T-adapter) 18/18PT	H-D®	EFI Delphi	732047	AT531 4078
① Deriv (T-adapter) 3x 18PT	H-D®	EFI Delphi		AT531 4080
(12) Voltmeter BOX			732057	AT540 5005

Last updated: March 21, 2019







SALE REPRESENTATIVE MATERIAL

Serial diagnostics - SW

BMW®

Version 20.0

Includes functions to perform diagnostics of all embeded control units through the diagnostic connector on the motorcycle. The kit contains a communication interface with a BMW® adapter, a USB cable for connection to your laptop (or PC) and diagnostic software that is compatible with **Windows 7**, **8.1** and **10**. There is also a wireless Bluetooth version of the communication interface available.

Motorcycle diagnostics for model year 2019 and older

Control units

Engine control units - ENG

Brakes - ABS

Body electronics - ZFE (ESA included)

Body electronics on new models:

ESA, BCO, FSA, ASW, BCL, BCA, SAF, SVA, TPM

Tyre pressure control - RDC

Anti-theft alarm system - DWA

Instrument cluster - Kombi

Audio

Diagnostic functions

Read and Clear Diagnostic Trouble Codes - up to 2019

Read Identification data - up to 2019

Monitoring real-time data - up to 2019

Test actuators

Special functions

Read and Set service date - up to 2019

Read and Set remaining distance to the service - up to 2019

Adaptation values reset

Adaptation of the tank ventilation system reset

Over-revving Analysis

Idle air control calibration

Date adjustment

Clock display 12h/24h

Outside temperature display °F/°C

Tyre pressure display bar / kPa / psi

Complete configuration (ABS, ESA, ...) of Instrument cluster

Units of consumption display (I/100km, km/l, mpg(GB), mpg(US))

Motorcycle report

Search for and identify all embedded control units, read fault code memory + generate and print a diagnostic report

ESA - Elektronische Fahrwerkseinstellung

/ Electronic suspension adjustment

BCO - Grundmodul

/ Basic module control unit

FSA - Grundmodul-Satellit

/ Basic module satellite

ASW - Scheinwerferelektronik

/ Headlight electronics

BCL - Grundmodul

/ Basic module control unit

BCA - Grundmodul-Sonderfahrzeug

/ Basic module special vehicle

SAF - Elektronische Fahrwerkseinstellung

/ Electronic suspension adjustment

SVA - Side View Assist

/ Side View Assist

TPM - Telematik

/ Telematics











Professional diagnostics & tuning tool for workshops and tuning centers

High Voltage Tester

AT111 4025



High Voltage Tester is a unique tool for checking ignition systems of spark-ignition engines.

It is used to measure the performance of ignition module (ignition coils) as well as the flash-over voltage on spark plugs. The test is very simple and fast, and is performed by connecting parts of the tester to the HV cables following the operating instructions.

It is carried out directly on the motorcycle (or vehicle) without dismantling the ignition modules or spark plugs.

The kit includes a set of high voltage loads which simulate the spark plug under the conditions of operation with the possibility of setting the high voltage in the range of 2.5 kV to 32.5 kV in 2.5 kV increments. In addition, the kit comprises a module simulating the spark gap of the spark plug using LED light. The simulated ignition of the plug can therefore be evaluated optically, without the risk of fire.

Last updated: October 10, 2018





Business partner



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Tuning Center Locator

