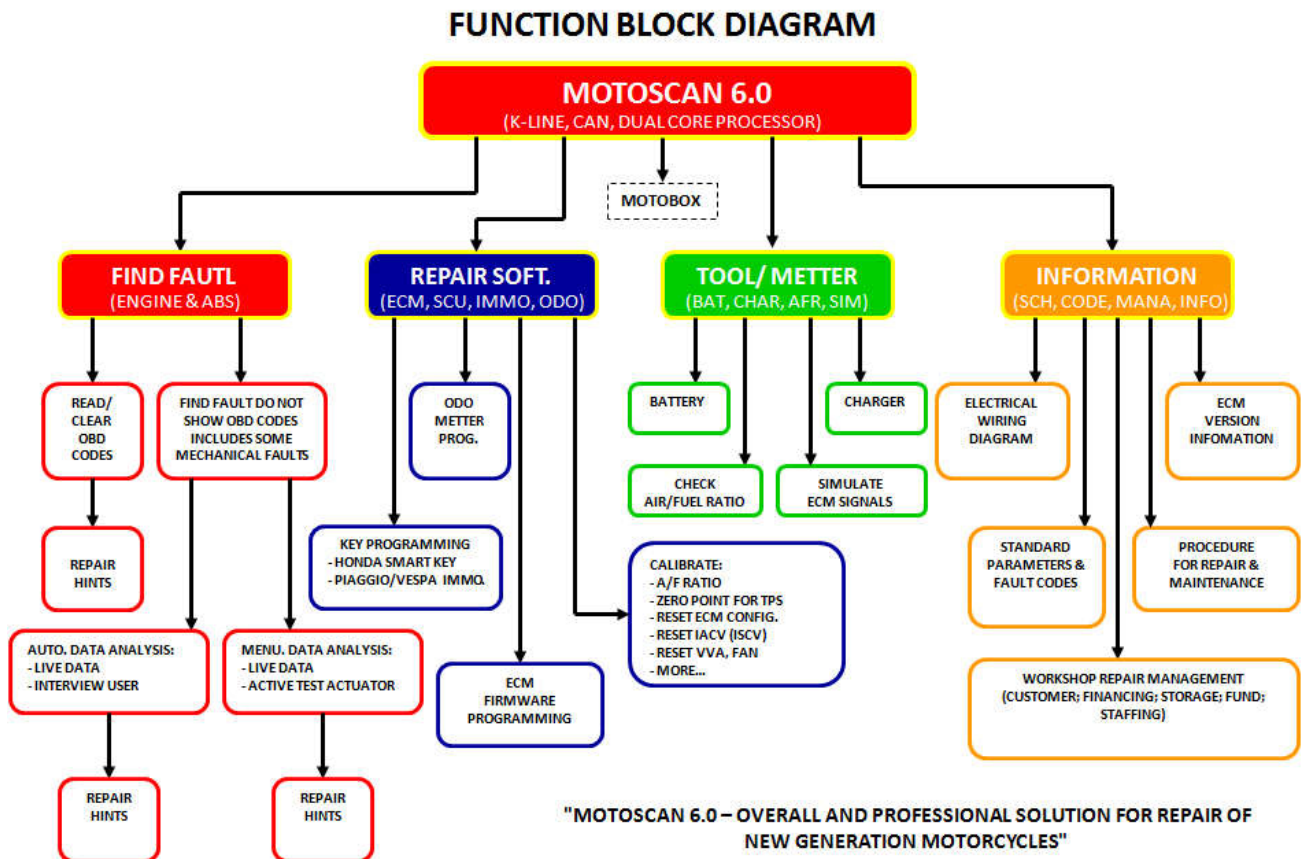


❖ **IMAGE**❖ **INTRODUCTION**

- **MOTOSCAN** is a small motorcycle & Scooter scanner. It researched and manufactured by DTDAuto Technology Team, Institute of Physics, Vietnam Academy of Science and Technology since 2013.
- This is equipment used for the repair workshops and motorcycle vocational training that identify fault electrical of PGM-FI/ FI motorcycles.
- MOTOSCAN is used to determine fault, repair electronic & electrical systems for the repair workshops, vocational schools of most a new generation PGM-FI motorbikes/ scooters in Vietnam and Asian market.
- MOTOSCAN was friend with the technicians in the repair workshop to identify fault, repair fault, support specialized measure tool and look up information, electrical circuit diagram, standard specification for most motorbikes and scooters in Asia market.
- **MOTOSCAN 6.0** supported advanced functions that connect with SCU system (Smart key Control Unit) to solve requirements for cases of registration a new key, lost of the keys, replacing SCU, replacing ECM since 2017. In particular, with MOTOBOX accessory, it can correct odometer value, reprogram ECM, simulate most ECU signals ... to repair advanced problems in electronic systems of a new generation motorbikes/scooters.
- **MOTOSCAN 6.0** has supported advanced functions that used diagnosis solution by analyzing auto data. It can find hard faults that MIL lamp does not indicate such as: Idling Stop mode trouble, down power when accelerate, over idle speed, more fuel consumption, weak engine, hard start and mechanical faults that common diagnostic tools cannot execute.
- Support programming, adjusting and setting parameters in ECU as electronic key programming, zero point programming of TPS, and air/fuel ratio programming, idle speed and pulse bandwidth adjustment to control fuel injection vv...

- Support look up information as the ECM version, **MOTOBOX** version and sync with a **MOTODATA** software to look up electrical circuit diagrams, standard specifications and suggest repair in detail.
- Equipment designed as the handheld, good quality, low cost and suitable for small and medium repair workshop.

❖ **FUNCTION**



☞ **FUNCTION 1: DETERMINE FAULT**

1.1. Read, clear fault codes stored in ECUs of engine system and ABS system

1.2. Find complex faults that MIL lamp does not indicate include such as:

- Diagnose faults by the automatic data analyzing and interviewing the technicians
- + Can't start engine
- + Down power when accelerate
- + Idling stop fault
- + Fuel consumption
- + Starter is not work
- + Random acceleration
- + Constant acceleration
- + Idling not work
- + Hard to start engine

- + Weak engine
- + Injector mechanical fault
- + Dirty Air filter*
- + Exhaust pipe block*
- + Air hole dirty/block of MAP sensor/Throttle*
- + Intake manifold leak*
- Diagnose faults by analyzing the engine live data and activate the actuators
 - + Voltage and open angle of throttle position sensor (TPS)
 - + Voltage and value of intake air temperature sensor (IAT)
 - + Voltage and value of manifold air pressure sensor (MAP)
 - + Voltage and value of engine temperature sensor (ECT)
 - + Voltage and value of oxygen sensor (O2S)
 - + Value of atmospheric pressure sensor
 - + Engine speed (CKP/ NE)
 - + Vehicle speed (VSS)
 - + Front/rear wheel speed (with ABS system)
 - + Status of fuel pump
 - + Ignition timing advance (ISA)
 - + Fuel injection time (Ti)
 - + Starter signal (STP)
 - + Status signal of side stand switch (SSTAND-SW)
 - + Status Hall sensor
 - + Evaporative purge cut solenoid valve output signal (PCS)
 - + Output signal active starter relay (ON/OFF)
 - + Output signal active PCV
 - + Output signal active IACV
 - + Output signal active MIL
 - + SCS input signal status (service check signal)
 - + Open state of step motor (IACV)
 - + State of heater of O2 sensor
 - + State of brake switch
 - + State of Start & Stop indicate lamp
 - + State of Start & Stop mode button
 - + State of start button
 - + State of pre-positioning
 - + Status of direction sensor
 - + Status of oil minimum pressure sensor
 - + Engine stop command from DSP
 - + Battery voltage (BATT)

- + Battery current
- + Short term fuel trim in closed loop
- + Environmental revision coefficient in closed loop
- + Fault code and total fault codes
- + And other parameters vv...
- Fuel pump, injector, ignition coil, IACV (ISCV), O2 heater, pump, blower, head lamp, MIL warning lamp, ABS warning lamp, Immobilizer lamp, Start&Stop lamp, engine oil pressure warning lamp, VVA valve, reset pre-positioning of crankshaft ...

🔧 **FUNCTION 2: REPAIR FIRMWARE ERROR & CALIBRATION**

2.1. Programming HONDA Smartkey, read KEY IDs, ECM ID for cases of register a new key, lost of the keys, replacing SCU. Support all Smartkey system on: SH 125/150/125D/150D/SM (2015-2018), SH 300i ABS (2016-2018), PCX (2016-2018), LEAD 125 (2017-2018)*, SH MODE (2016-2017)*

2.2. Programming key immobilizer and get out immobilizer ID code for PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs) that ECM types: AC13I, AC191, AC19I, AC20I, AC21I, AC23I, AC24I, AC25I, AC27I, AC32I, AC5I, AC8I, ACI600, AC601, ACI602, ACI603, ACI604, ACI605, ACI606, ACII, MIU1, MIU2, MIU G3/RIU1, MIU4, PGN04/PGS02/PGT01

Reset immobilizer, register new key when lost all of the keys, register additional keys ... by many methods (KEY to IMMO. or IMMO. to KEY)

2.3. Correct and adjust value of digital odometer of HONDA, YAMAHA (ODO) **

Edit, decode odometer data and convert information automatically in EEPROM

2.4. Programming ECM firmware ** for:

- **HONDA: AIR BALDE 125, LEAD 125, SH MODE, VISION 110, VISION ESP***
- **PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs): ECM types are AC19I/AC20I/AC24I/AC25I/ AC27I/AC32I, MIU G3/RIU1 and ECM PGN04/PGS02/PGT01 and PGQ16***

Initialize and repair data errors, upgrade the versions of MCU, EEPROM

2.5. Calibrate and set control parameters in the ECM:

- Calibrate air/fuel ratio (AFR): YAMAHA, PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs), SYM
- Reset to manufacturer value of ECM: HONDA, YAMAHA, PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs)
- Offset zero point value and set range of throttle position sensor for PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs)
- Reset IACV: HONDA, YAMAHA, PIAGGIO/VESPA (it also support GILERA, APRILIA, DERBI, PEUGEOT, which use similar ECMs), KYMCO
- Adjust pulse band width to control fuel injectors (Ti) and idle speed: YAMAHA, SYM
- Create new and repair data errors, upgrade the version MCU, EEPROM

☞ FUNCTION 3: SPECIALIZED MEASURE TOOL

1. Fast measure and assess capacity, quality of battery
2. Review charging status and rated the quality of the generator, regulator
3. Measure the air/fuel ratio (A/F) to assess the instantaneous fuel consumption
4. Emulate the signals on motorcycle for diagnosing faults and repair ECU**

☞ FUNCTION 4: INFORMATION

1. Show the current firmware version of ECM and ACU
2. Look up the acronym, position of signal pins for systems: ECM, SCU, ACU, ODO, IMMO, SMART KEY
3. Look up electrical wiring diagram: principle diagram, schematic assembly and specified conditions
4. Look up the process assembly, repair, maintenance mechanic, oil warning lamp reset
5. Manage repair workshop: customer, financial, store, treasury, employees
6. Update version of data software and firmware via Internet

NOTES:

- The advanced functions with an asterisk (*), will appear on the next version
- The advanced functions with an asterisk (**), you must purchase additional **MOTOBOX**

❖ ADDRESS & APPLICATION RANGE

- It is diagnostic tool in motorcycle/ Scooter workshops and equipment for technical training.
- A semi-finished products connect to trainer for electronic injection & ignition system of PGM-FI motorcycles.
- A safety check equipment of the motorcycles before it is running on the road and in motorcycle club.

- **PIAGGIO/VESPA:** BEVERLY 125/300/350 MIUG3, FLY 125/150 MIUG3, FLY 125 3V MIUG3, FLY 125 AC19I/20I/191/201, FLY 150 3V MIUG3, FLY 150 AC19I/20I/191/201, LIBERTY 125 3V PNG04/PGS02/PGT01, LIBERTY 125 AC19I/20I/191/201, LIBERTY 150 3V MIUG3, LIBERTY 150 3V PGN04/PGS02/PGT01, LIBERTY 150 AC19I/20I/191/201, LIBERTY ABS PGS06, X10 125/350 MIUG3, MEDLEY 125/150 PGQ16, VESPA 946 125/150 MIUG3, GTS 125/150 MIUG3, LXV 125 3V MIUG3, GTS 125/300 ABS MIUG3, LT 125/150 3V MIUG3, LX 125 MIUG3, LX 125 AC19I/20I/191/201, LX 150 MIUG3, LX 150 AC19I/20I/191/201, LX 125/150 3V MIUG3, LX 125 3V PGN04/PGS02/PGT01, LX150 3V PGN04, LXV125 2V MIUG3, LXV125/150 3V MIUG3, PRIMAVE 125/150 MIUG3, PRIMAVE 125/150 PGN04/PGS02/PGT01, PRIMAVERA ABS, S125/150 MIUG3, S125/150 3V MIUG3, SPRINT 125/150 3V PGN04/PGS02/PGT01, SPRINT ABS ...
- **HONDA:** AIR BLADE, CBR 250, CLICK-i, CLICK 125i, DYLAN, LEAD 110, LEAD 125, FUTURE NEO FI, FUTURE X FI, FUTURE 125 FI, PCX, PS, VISION, SH125/150i, SH125/150 ESP, SH 300i, SH

300i ABS, SH MODE, SCR 110, WAVE RSX FI, WINNER 150, MSX 125, SCOOPY-i, VARIO 150, WAVE 110i, WAVE 125 (Thailand), WAVE 125i ...

- **YAMAHA:** ACZURO, CUXI, EXCITER FI, JUPITER FI GRAVITA, JUPITER FI GRAVITA GREEN, JUPITER FI RC, LUVIAS GTX FI, LUVIAS FI, NOZZA, NOZZA LIMITED, NOUVO LX, NOUVO SX RC, NOUVO SX STD, NOUVO SX GP, NM-X, SIRIUS FI, YZF, FZ-S FI, YZF R6, FZ1 FAZER, YBR ...
- **SUZUKI:** HAYATE 125, UA 125-T, VIVA 115, GZ150-A, EN150-A, RAIDER 150, THUNDER 150/150S, IMPLUSE ...
- **SYM :** ATTLA-V SMART IDLE, ELIZABETH SMART IDLE, ELIZABETH, JOYRIDE, SHARK 125, SHARK 125 CBS, SHARK MINI 125, PASSING EFI ...
- **KYMCO :** PEOPLE S FI, PEOPLE 16 FI, MANY MACAROL FI, MANY FI, LIKE FI, JOCKEY FI ...

❖ PACKAGE

- 01 Handheld with LCD and function control buttons
- 01 Data cable used to determine faults (CAN, K-line communication protocol)
- 01 Cable receiver signal and optical sensor
- 01 Cable check battery and generator
- 02 Jumpers for reading fault code by MIL (for some kind of vehicles only)
- 02 Cables program HONDA smart key
- 01 12V/DC Power cable
- 01 220V/AC to 12V/DC power converter
- 01 Extendable cable for Yamaha
- 01 **MOTOBOX** - electrical accessory (an optional only and isn't included of standard pack)
- 01 MT0006 LINK - data cable (an optional only and isn't included of standard pack)
- 01 Accessory measure exhaust (an optional only and isn't included of standard pack)
- 01 Update cable (an optional for 5.X/6.X model only and isn't included with 4.X models)
- 01 CD video use guide and free **MOTODATA** software
- 01 Guide book
- 01 Hand cloth bag

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