

AMM - IMMOGNITION I&II



- MILLENIUM SERIES -

CUSTOMER INFORMATION

CONGRATULATIONS!

You've done it.

You just bought the AMM - IMMOGNITION the world's finest ignition system for Harley-Davidson® motorcycles.

Well done. We have put all our experience into this new ignition system in order to give you full control over your motorcycle's performance. The AMM - IMMOGNITION is able to deliver superior engine performance, better than any other ignition system. The AMM - IMMOGNITION is designed to be used with all Evolution® and Shovelhead engines. For the newer TwinCam® engines please use the AMM - P3 ignition system.

When people come up to compliment you on the culture and power of your Harley-Davidson®-motorcycle, you can smile knowingly ... and hopefully you'll tell them a little about us.

This ignition system has been designed, tested, improved and again & again tested and refined to deliver the maximum possible performance. For any Evolution® or Shovelhead engine, in any situation and with immaculate engine behaviour.

Despite of the countless features, this ignition system is very easy to install and to operate.

INTEGRATED SYSTEM

The idea behind this ignition system is to implement a high-precision ignition computer incl. ignition power amplifier and supplementary features as field-programmable advance curves and integrated immobilizer into a compact unit, that outperforms any stock or aftermarket ignition. The whole miniature electronic assembly is integrated into a polished F53 aluminium nose-cone cover. Just install the late OEM trigger rotor and sensor-plate and you have done half the job. (the AMM-IMMOGNITION II single-fire comes with its own sensor plate). The Sensor is connected inside the nose cone, so that only 3 (2 for dual-fire) wires come out the nose cone (ign. +12V and coil- front & rear). The aluminium cover is used as a ground connection. The AMM - IMMOGNITION I (dual-fire) works great with your stock Harley® ignition coil. As you can see: no more black box, no more cable salad. The OEM Vacuum Switch (V.O.E.S.) is not needed for this system.

FIELDPROGRAMMABLE ADVANCE CURVE

This is incredible. The high resolution advance curve of the AMM - IMMOGNITION can be reprogrammed anywhere and anytime within a fraction of a second simply by „touching“ the nose cone cover with a „curve-key“. No computer required. This unique feature enables you to tune your Harley® engine within seconds or to change „the mood of your engine“. In some cases a change of the advance-curve has such dramatic effects that you may think, you have changed your engine. One thing is sure: You never knew how great a Harley-Davidson®-engine can run.

The Sensor Plate is adjusted to the TDC of the front cylinder (in the compression stroke). The exact position of the sensor is monitored by the green LED. After this initial adjustment is made, all fine-tuning is done with the curve-keys. In order to get the most out of your engine, your AMM-dealer holds a complete set of AMM - CURVE-KEYs and is ready and competent to assist you, in order to meet your riding requirements. Official AMM-retailers own the AMM CURVE-KEY PROGRAMMING-KIT and can modify & design advance-curves for your very specific needs.

„SYNCHRO-CONTROL“

The AMM - IMMOGNITION features the „SYNCHRO-CONTROL“ mode, a development by AMM, capable of automatically optimizing engine-torque and reducing vibration through the entire rpm-range. This is done in real-time by elaborate large-scale calculations in the ignition computer. Therefore a rear-cylinder offset adjustment is not necessary.

INTEGRATED IMMOBILIZER

We have implemented the latest available technology in order to supply you with an electronic high-security immobilizer feature. The engine will get no ignition until you touch the AMM - IMMOGNITION with your activation-key. The activation code has more than 281.500.000.000.000 combinations. Wrong code -> no ignition -> no theft. We supply two activation-keys with every IMMOGNITION unit. If you lose your activation-keys there is no way of operating the ignition. This system is bullet-proof. Don't worry, if you lose them both, we can send you new keys for your IMMOGNITION. For ordering spare-activation keys please use the supplied order form. A new advance curve can only be programmed, if the IMMOGNITION has been activated with the appropriate activation key. So nobody but you can modify the advance-curve of your AMM - IMMOGNITION.

RIDING PLEASURE

Probably you bought the AMM - IMMOGNITION just because of the integrated immobilizer. If so, you are ready for a surprise. Nothing powers your Harley-Davidson® engine better than the AMM - IMMOGNITION. Period.

You can also deactivate the immobilizer function (i.e. for use on the race track) with the AMM - IMMOLATOR-KEY.

If you have any questions or need more information about our products don't hesitate to contact the next AMM-dealer or AMM directly.

Additional information is also available on our web-site: www.amm.haan.de

You can also reach us by email:

amm@haan.de



DIPL.-ING. CHARLES ALTMANN · AM MÜHLENBUSCH 57 · 42781 HAAN · GERMANY · PHONE +49-2129-54 260

AMM reserves the right to make changes without further notice to any products herein to improve reliability, function or design.

Disclaimer: All words marked with ® are used as a reference only, and belong to the Harley-Davidson company, which is in no way affiliated with AMM.

ALTMANN MICRO MACHINES

GLOBAL WARRANTY AND PROPRIETARY RIGHTS STATEMENT

Limited Warranty:

ALTMANN MICRO MACHINES („AMM“) warrants to you as an end-user purchaser AMM Hardware Products against defects in material and workmanship for a period of FIVE (5) YEARS from the date of original manufacturing, as indicated on the guarantee certificate.

If you discover a defect, AMM will, at its option, repair, replace, or refund the purchase price of this product at no charge to you, provided you return it during the warranty period, with transportation charges prepaid, to AMM Germany. (You can obtain additional information by contacting AMM at the address printed on this certificate.)

To each product returned for warranty service, please attach your name, address, telephone number, error description, and the original guarantee certificate bearing the appropriate AMM serial numbers as proof of original retail purchase.

AMM does not warrant any products that are not AMM products. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the permission of AMM; if any AMM serial number has been removed or defaced, or if the original guarantee certificate is lost or not available.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. AMM SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No AMM dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

AMM IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING, REPROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED IN OR USED WITH AMM PRODUCTS.

AMM'S PRODUCTS ARE NOT DESIGNED, INTENDED OR AUTHORIZED FOR USE AS COMPONENTS IN APPLICATIONS INTENDED TO SUPPORT OR SUSTAIN LIFE, OR FOR ANY OTHER APPLICATION IN WHICH THE FAILURE OF THE PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR. SHOULD CUSTOMER PURCHASE OR USE THE PRODUCTS FOR ANY SUCH UNINTENDED OR UNAUTHORIZED APPLICATION, CUSTOMER SHALL INDEMNIFY AND HOLD AMM AND THEIR RESPECTIVE OFFICERS, EMPLOYEES AND DISTRIBUTORS HARMLESS AGAINST ALL CLAIMS, COSTS DAMAGES, AND EXPENSES, AND REASONABLE ATTORNEY FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PERSONAL INJURY OR DEATH ASSOCIATED WITH SUCH UNINTENDED OR UNAUTHORIZED USE, EVEN IF SUCH CLAIM ALLEGES THAT AMM WAS NEGLIGENT REGARDING THE DESIGN OR MANUFACTURE OF THE PART.

Proprietary Rights Statement

All AMM Software Products (whether embedded in ROM's or other hardware or contained on diskettes or other media) including all related manuals and documentations (collectively „AMM Software“) are proprietary to AMM, copyrighted with all rights reserved, and licenced to you. All AMM Software is delivered subject to the terms of the related license agreement.

With regard to any AMM Software contained in purchased hardware products, the AMM Software may only be used with the related hardware products. No AMM Software may be (i) seperated from any hardware products as shipped by AMM, or (ii) distributed, copied, translated, disassembled, decompiled, reverse engineered, merged or combined with other software, adapted, varied or modified.

All AMM manuals and documentation of any kind are proprietary to AMM and are copyrighted with all rights reserved.

This Proprietary Rights Statement shall be interpreted in conjunction with any applicable AMM Software License Agreement, but in the event of any conflict, the latter terms and conditions shall prevail.



REGISTRATION FORM FOR VEHICLE INSURANCE
AMM-IMMOGNITION (patent applied for)

HIGH-SECURITY ELECTRONIC IMMOBILIZER SYSTEM
OVER 281,500,000,000,000 COMBINATIONS
SINGLE-CHIP LOCKING-MECHANISM

This registration form must be handed over to your vehicle insurance, if the AMM - IMMOGNITION immobilizer is part of your insurance contract. The retailer confirms with his signature, that the product has been conscientiously installed according to our installation instructions with the immobilizer activated. The purchaser confirms with his signature to neglect any modifications to the AMM - Immobilizer or its installation (f.e. removal, deactivation) for the entire duration of the insurance contract.

Product serial-no.: _____ (see Guarantee Certificate)

Name: _____

Street: _____

Zip: _____ City: _____

State/Country: _____

Phone: _____

The product was installed at: _____ date: _____

Type of motorcycle: _____

Vehicle Identification Number: _____

Stamp of AMM - Retailer

Signature of Retailer: _____ Signature of Purchaser: _____

If you have any questions, please turn to the following mailing address or via email to: amm@haan.de

AMM - IMMOGNITION I&II

OPERATION INSTRUCTIONS

ACTIVATION:

Turn ignition switch ON (red LED lights up). Touch the AMM - IMMOGNITION Touch-Port (center of nose cone cover) with one of your green activation-keys (red LED goes off & green LED lights up). Start the engine (kick or E-start). The green LED lights up and goes off with every revolution of the engine.

The green LED monitors the flywheel position:

green LED on: flywheel between 50° before TDC and TDC (compression stroke)
green LED off: flywheel behind TDC or more than 50° before TDC (compression stroke)

When the engine halts with ignition ON and AMM - IMMOGNITION activated (i.e. in case of fuel reserve or during starting), it is likely, that both LEDs are off. This means, that the flywheel position is not between 50° before TDC and TDC (compression stroke). The engine can be started without activating again.

DEACTIVATION:

Turn ignition switch OFF. The next time you turn the ignition ON, the AMM - IMMOGNITION will be deactivated (red LED lights up).

Attention: If the power supply of the AMM-IMMOGNITION is interrupted only for a short duration, the immobilizer may be activated and stop the ignition (halt the engine). As this may also happen during riding and can lead to a dangerous situation, we strongly recommend that you keep your motorcycle's electric system in a perfect condition. Power supply interruption can f.e. be caused by faulty ignition- or kill-switches, circuit breakers, bad connections and cables. If for any reason power supply interruption cannot be avoided, we recommend to deactivate the immobilizer function of your AMM-IMMOGNITION with the AMM-IMMOLATOR-KEY.

Attention: Some ignition switches may interrupt the supply voltage for a short time, when switching the lights on or off, and the AMM - IMMOGNITION may be deactivated and thus, the engine may halt. In order to prevent unwanted deactivation of the ignition causing engine-halt, please always start and ride with the lights switched on.

PROGRAMMING:

Turn ignition switch ON: red LED lights up. Touch the AMM - IMMOGNITION Touch Port with your activation-key (red LED goes off & green LED lights up), immediately (within 2 seconds) remove the activation-key and touch the Touch-Port with the desired curve-key (green LED blinks in order to indicate a successful programming).

Turn ignition OFF and ON again, and activate AMM - IMMOGNITION with your green activation key.

You may now start the engine and try out the new advance curve.

STATUS:

red LED on: Ignition switch ON, AMM - IMMOGNITION not activated.

green LED on: Ignition switch OFF, AMM - IMMOGNITION activated.

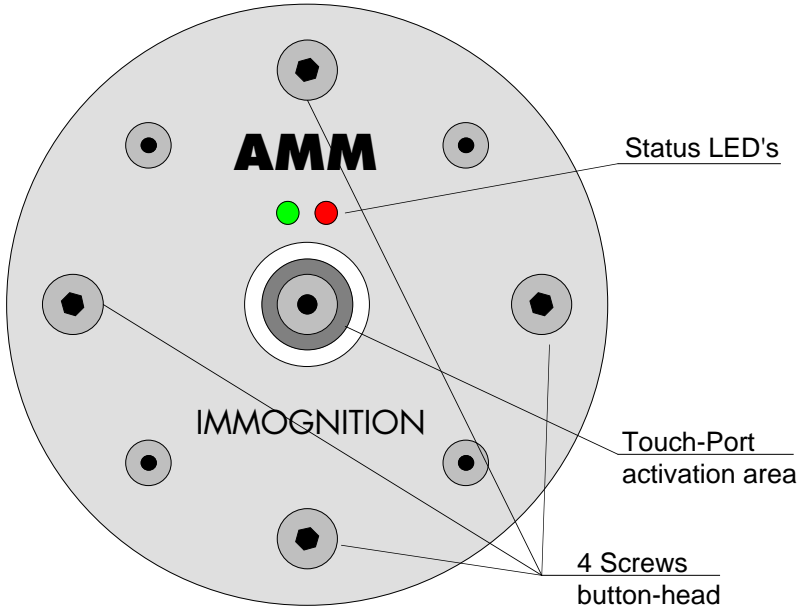
green LED blinks: Curve was programmed successfully.

red LED blinks fast: AMM - IMMOGNITION switches over to internal spare advance-curve because no valid advance-curve was found in the memory. Please load a new advance-curve.

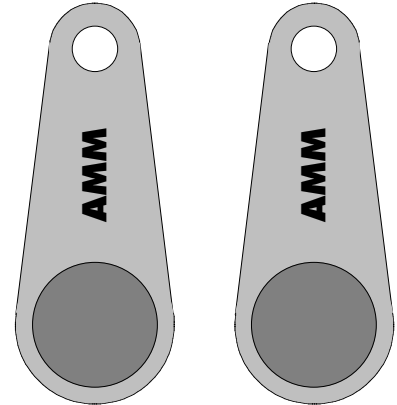
Note: It is extremely unlikely (it will not happen) that the loaded advance curve is lost due to a software hangup. However, the system will then switch to the internal spare curve and tell you via the red-LED blink signal. For your reference: the internal spare advance curve is identical to AMM-CURVE 1.



AMM-IMMOGNITION



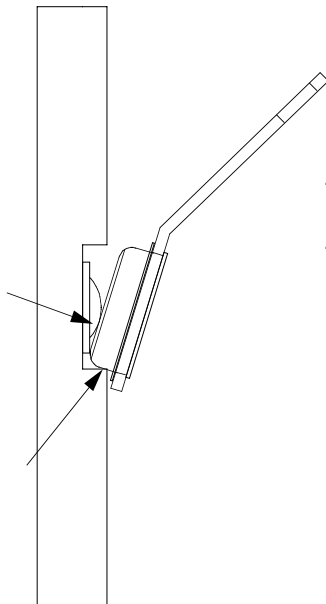
ACTIVATION-KEYs



The AMM - IMMOGNITION comes with 4 screws and 2 locknuts. 2 screws (long) are needed for fastening the AMM - IMMOGNITION to the nosecone. The other 2 screws (short) are used with the locknuts to close the 2 remaining holes in the Immognition-cover.

This enables you to install the AMM - IMMOGNITION in horizontal (or your favourite) position on Big-Twin and Sporty- engines.

AMM-IMMOGNITION and ACTIVATION-KEY (side view)



The activation key must touch the touch-port.

The two arrows point to the positions that must have contact, in order to allow the communication.

AMM - IMMOGNITION I - THE MILLENIUM SERIES -

dual-fire

INSTALLATION INSTRUCTIONS

Checklist:

- If you have a heart-disease, let someone else do the job!
- The AMM - IMMOGNITION is no toy-stuff. If you don't want to be electrocuted, turn ignition switch OFF and disconnect the ignition coil (coil minus). It is also good practice to disconnect the battery.
- We have designed the AMM - IMMOGNITION as a powerful tool for the experienced rider. It will give you flawless engine performance, but it is not checked to comply with any law or regulation in any state or country. If you use it, you do it on your own risk and responsibility. If in doubt, ask the police or your local dealer.
- The AMM - IMMOGNITION comes preloaded with AMM-CURVE #1. This is a high-load touring curve for Big-Twin engines with unrestricted exhaust system. The maximum advance of 30,2° is reached at 3000 rpm. The maximum rpm is set to 5400 rpm. Your AMM-dealer holds a complete set of AMM-CURVE-KEYs to match your specific requirements.

Installation:

1) Remove the nose cone cover. On models with mechanical ignition, remove point plate and advance unit. Install Late Trigger Rotor (OEM 32402-83) and Sensor-Assembly (OEM 32400-80A or later). On models with stock electronic ignition please check, that the late trigger rotor is installed (check for OEM OEM 32402-83).

2) Shorten the cable of the sensor assembly to 12 cm. Remove 4mm of the isolation of the black, red & green wire and install the cable-end-sleeves (included in the package) with appropriate crimping pliers. Install gasket (included). Connect the cables of the sensor assembly to the AMM - IMMOGNITION according to the installation drawing. Be especially careful with the small screws (tighten with two fingers only) and use a SMALL screwdriver for the job. Now route the sleeved end of the grey coil cable (included) from the outside through the small hole at the bottom of the nosecone and carefully connect the 2 wires to the AMM - IMMOGNITION (according to color, see installation drawing).

3) Take out & clean the spark plugs. Check electrode gap for app. 1 mm. Open the timing inspection hole on the left side of the crank-case. Adjust front piston to Top Dead Center in the COMPRESSION STROKE (the compression stroke is reached, when air is blown out of the spark plug hole of the front cylinder). Find TDC mark on flywheel by looking into the inspection hole (On late Shovels and Evos the TDC marking is a line). Be sure, that front piston is in Top Dead Center position.

Important: Do not identify the compression stroke by looking at the valves. Instead, put a finger into the front spark hole and rotate the engine in running direction until you feel the compression.

Tip: My way of doing it is sitting on the bike with 4th or 5th gear engaged, slowly rolling forward with one finger in the front spark hole, until I feel compression :-). Let someone else look into the inspection hole to tell you when the TDC marking shows up while you roll forward slowly. Put bike on sidestand with the TDC mark in the middle of the inspection hole.

4) Route the grey coil cable to the ignition coil and carefully remove isolation as needed. Connect the white wire to the plus-terminal of the ignition-coil (+12Volt, ignition). Do not connect the brown wire by now! Connect battery & turn ignition switch ON (kill-switch in RUN position). Hold the AMM - IMMOGNITION in left hand, so that its metal cover touches the nose-cone (ground connection): the red LED lights up. Activate the AMM - IMMOGNITION with one of the green activation keys: now the red LED goes off and the green LED lights up.

5) With the right hand rotate the sensor plate completely from left to right (clockwise) until green LED goes off; then to the left until green LED goes on. Now rotate sensor plate very slowly to the right to the very position, where the green LED goes off. Fix the sensor plate in this exact position.

Tip: If the green LED does not react while rotating the sensor plate, check if sensor plate is connected correctly. If so, the front piston is not in the compression stroke. You've been warned -> go back to step 3.

Turn ignition switch OFF. Install the AMM - IMMOGNITION into the nose cone and fix it with the screws. Please take care, that there are no short circuits between the wires in the nosecone. Please ensure, that there is no mechanical stress between the Immognition cover and the sensor plate or the cables.

6) Install the spark plugs and ignition cables. Close the timing inspection hole. Connect the brown wire to the minus-terminal of the ignition coil.

7) Enjoy your test-ride. Please ride carefully!

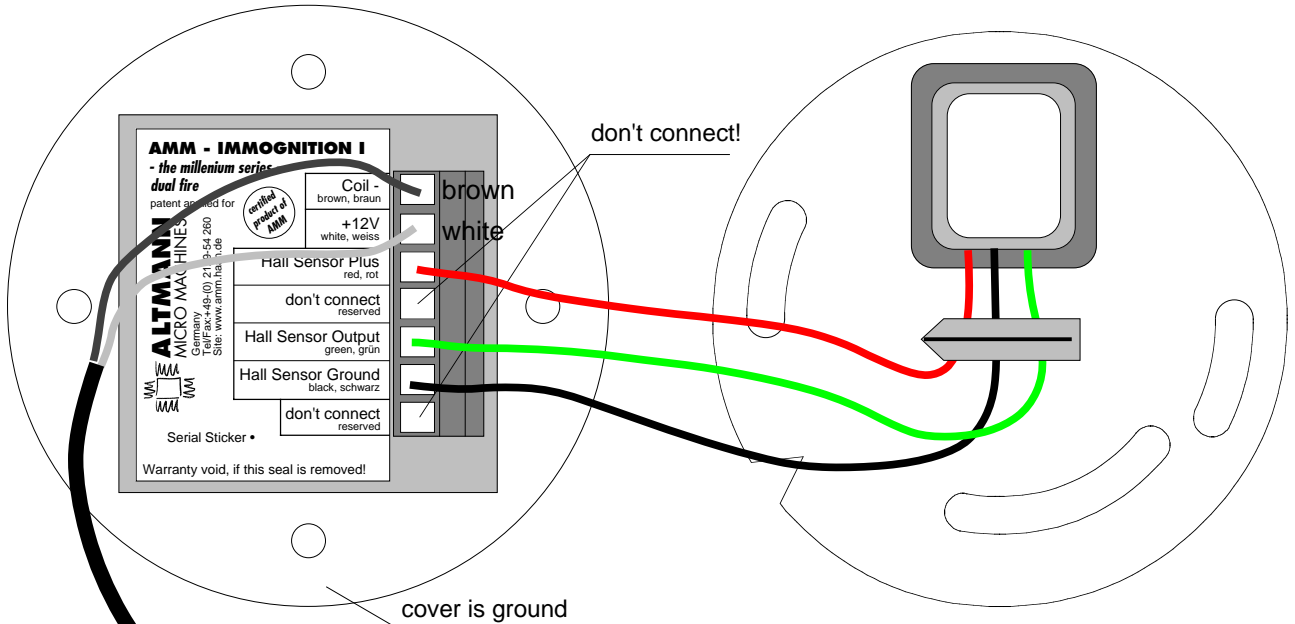
PS: If you have any questions concerning installation, please refer to our website: www.amm.haan.de

Installation Drawing

AMM-IMMOGNITION I, back side

OEM Sensor-Platte '94..

use your stock sensor - plate



This cable is routed through the small hole on the bottom of the nosecone.

Keep away from exhaust and cylinder-heads in order to prevent excessive heat.

recommended ignition coils:

between 2,2Ω..3,0Ω primary resistance

Dual-Fire Ignition-Coil

+12 Volt from ignition switch

white

ignition coil plus, +12Volt, white cable

min. 2,2Ω

to the spark-plugs

brown

ignition coil minus, brown cable

WARNING!

Persons with heart diseases must not install or maintenance this ignition system!

Do not overtighten terminal screws! Install included cable-end-sleeves with appropriate crimping pliers! Take care, that there are no short circuits between the cables.

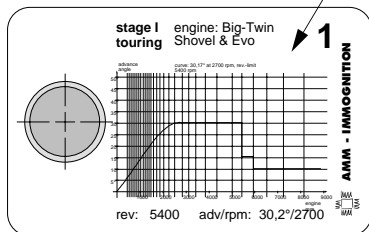
During installation and adjustment please keep the brown cable disconnected from the ignition coil in order to prevent dangerous voltages.

Never use this ignition system without ignition cables and spark-plugs properly connected!

KEYs for your AMM - IMMOGNITION:

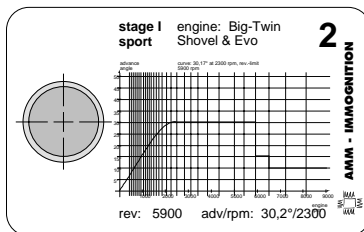
Your AMM-IMMOGNITION comes preprogrammed with this advance curve

Stage I



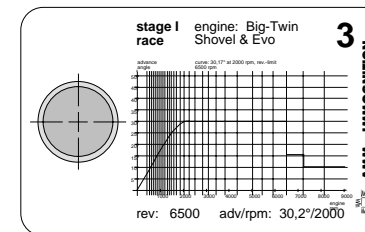
1 high-torque curve for Big-Twin engines with unrestricted (loud) exhaust and / or high-compression, also heavy bikes

Sport



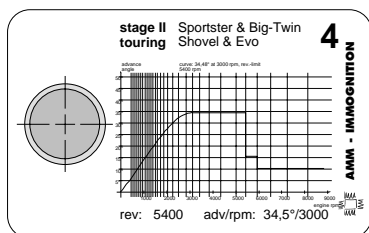
2 sport curve for Big-Twin engines with unrestricted (loud) exhaust and / or high-compression

Race

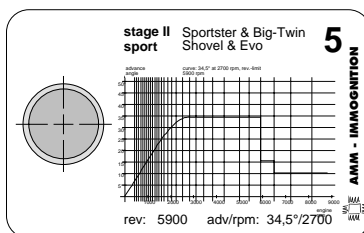


3 aggressive curve for Big-Twin engines with unrestricted (loud) exhaust and / or high-compression designed for racing applications

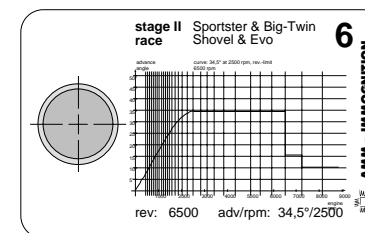
Stage II



4 high-torque curve for Big-Twin & Sportster engines with restricted or sport exhaust (Supertrapp... Vance & Hines ...), designed for high-load touring

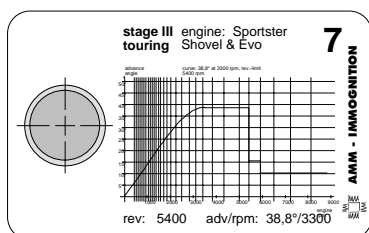


5 very popular sport curve for Big-Twin, Sportster & Buell engines with restricted or sport exhaust (Supertrapp... Vance & Hines ...),

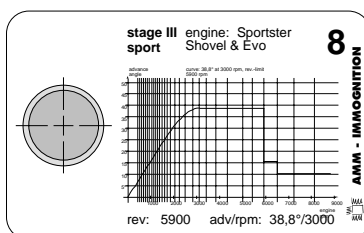


6 aggressive curve for Big-Twin, Sportster & Buell engines with restricted or sport exhaust, designed for racing applications

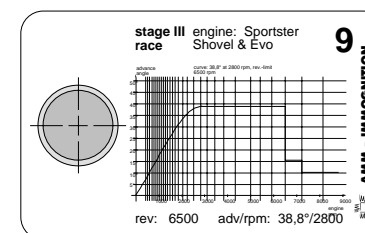
Stage III



7 high-load curve for Sportster & Buell engines with restricted or sport exhaust (Supertrapp... Vance & Hines ...), especially for 883

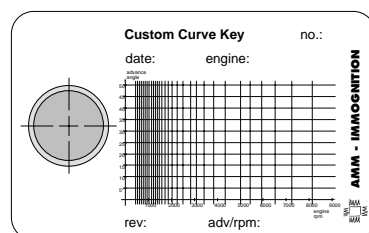


8 hot sport curve for 883 Sportster & Buell engines with restricted or sport exhaust (Supertrapp... Vance & Hines ...),



9 very aggressive curve for 883 Sportster engines, designed for race applications

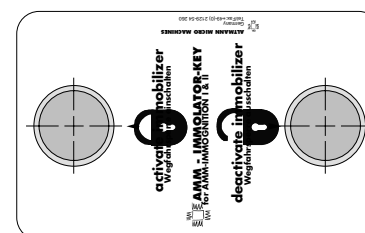
Custom



Custom Curve-Key:

You name it, we make it for you,,, advance curve to your exact specification.

Price is US\$ 88,- incl. worldwide air shipping
 Order via email: amm@haan.de



AMM - IMMOLATOR-KEY

With the AMM-IMMOLATOR-KEY you can activate and deactivate the immobilizer function of your AMM - IMMOGNITION.

For those who sometimes just want a great ignition without immobilizer.