ADVANCED DRIVER MANUAL

Honda

Rebel CMX250c

(MC13)

Rebel
ADVANCED
DATABASE

Version 2022-02a-eng

Introduction

This documentation was originally written for me.

It is a report in which made experiences, data and repairs at the CMX250 are documented.

But articles from CMX250 / 450 riders can be included.

This text is intended to be an additional source of information for CMX Rebel riders

This docu will start in january 2022 and is available on the internet at

Extended-driver-manual.pdf

for free download for private use.

Any commercial use is prohibited.

Inhaltsverzeichnis

1. General information

I have used the same table of contents as in the workshop manual.

I have tried to make the text as bilingual as possible.

Where I did not succeed, please forgive me.
This PDF should not be a workshop manual but only a supplement.
If new articles are added, I will mark them with "NEW" in the table of contents.
At the moment in the first version 1.1 is still little information to find but this documentation will be continuously expanded with information about the CMX250.
If you find a bug you are welcome to tell me about it as well as other suggestions.

2. Frame

3. Maintenance

4. Lubrication system

5. Carburetor - fuel system „NEW“

5.1 Carburetors quick an dirty (A little carburetor lesson)

The carburetor is a masterpiece of engineering.
It is designed to provide the correct air/gasoline mixture at any engine speed and load.

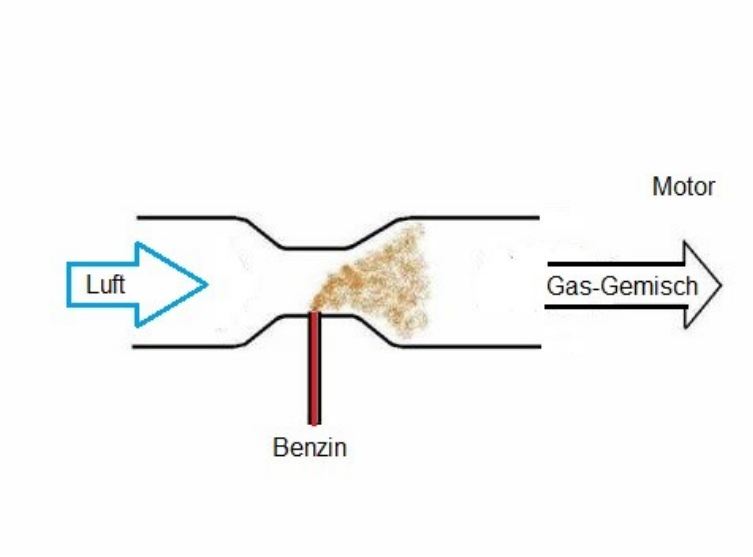
How does a carburetor work?

The most important component of any carburetor is the venturi tube, which is the tube that forms the housing, and is basically nothing more than a rolled up airplane wing. Here, the top of the "wing" is the inside of the tube:

Now, when air flows through the tube and passes the narrower area, it must flow faster at this point than in the other areas. This creates a negative pressure at the narrow point (like at the top of an airfoil).

Air flows through the Venturi tube and, at the narrowest point, a negative pressure is created.

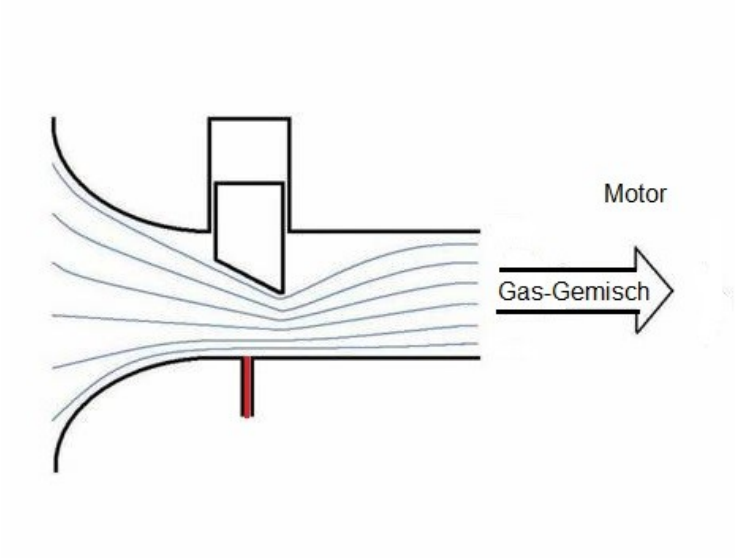
A small tube filled with gasoline is attached to the narrowest point, so that gasoline particles are sucked in by the negative pressure in the Venturi tube, where they are mixed with the air flowing through and entrained.



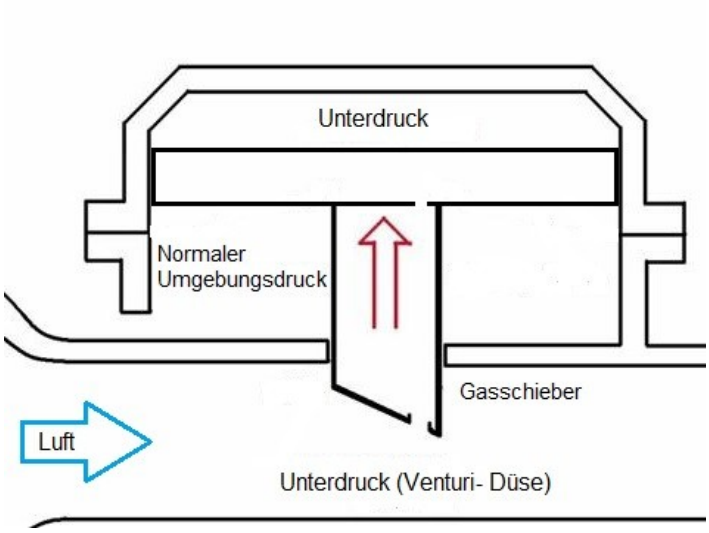
Gasoline is sucked in by the vacuum, and entrained by the airflow.

This is actually all that is needed for a carburetor and the first carburetors did not have more functional units.
For comfortable driving, however, this is unfortunately not enough.
The engine speed should be as continuously controllable as possible.

With an additional slide that increases or decreases the cross-section of the Venturi tube, we can regulate the flow velocity of the air in the Venturi tube.
Unfortunately, this design has a small disadvantage: When the slider is abruptly pulled open, the entire cross-section is open, but the engine still has a low idle speed and the vacuum in the Venturi tube drops at the narrowest point. This means that not enough gasoline can be drawn in - the engine runs too lean or dies.
Conversely, the engine naturally overfats when the slide valve is closed.

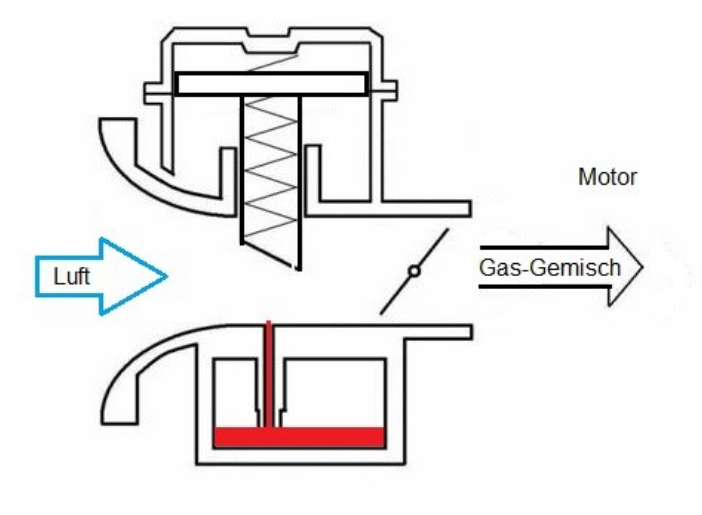


This can be remedied by an automatic vacuum-dependent valve control:



When air flows through the Venturi tube, negative pressure is created - and this spreads through the opening in the slide valve. This negative pressure raises the slide against the ambient pressure, separated by a piston, until a pressure equilibrium is reached.

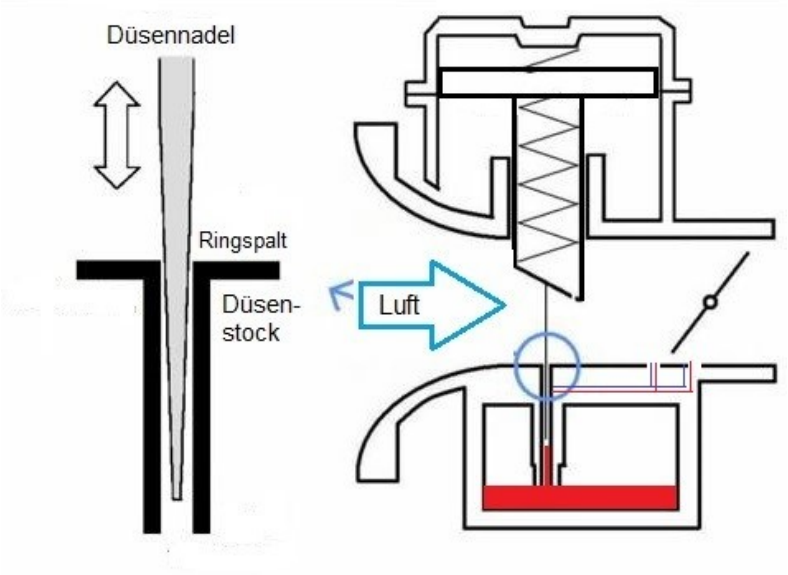
The carburetor now works quite well, but unfortunately there is no way to regulate it. A throttle valve is used for regulation.



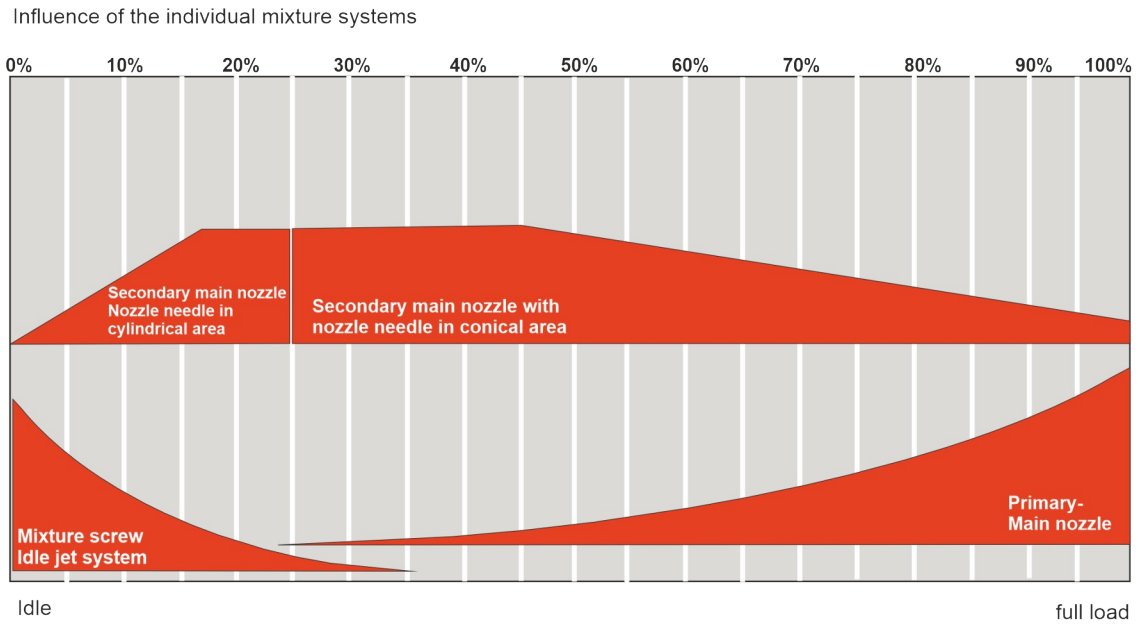
With the throttle valve, depending on the position in the tube, the air flow in our Venturi tube can be regulated.

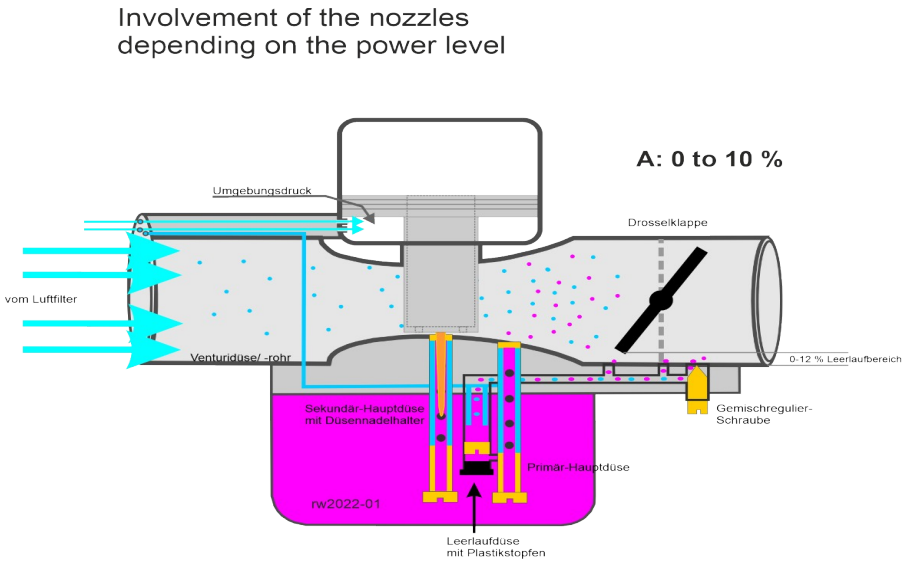
However, the throttle valve relocates the narrowest point and thus the venturi principle to the throttle valve itself.
With a system of nozzles, mixing tubes and ducts, gasoline is now brought to the throttle valve so that it can be sucked in there.

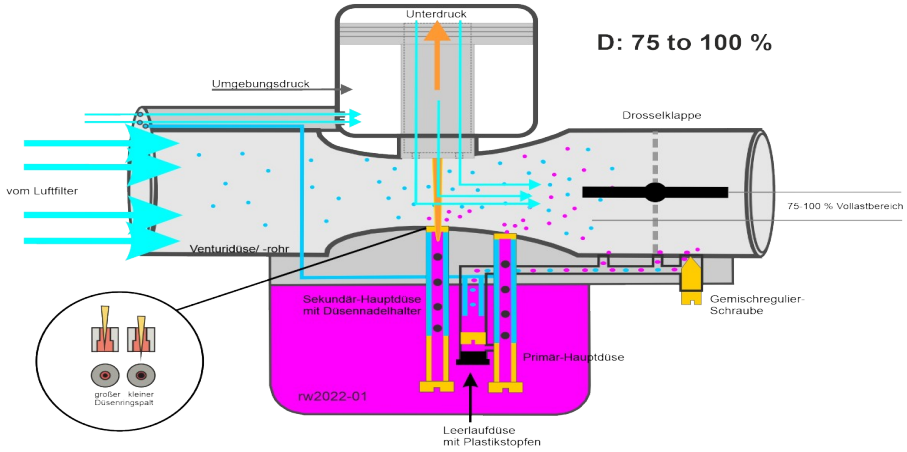
Further regulation takes place via a nozzle needle that opens an annular gap more or less wide.



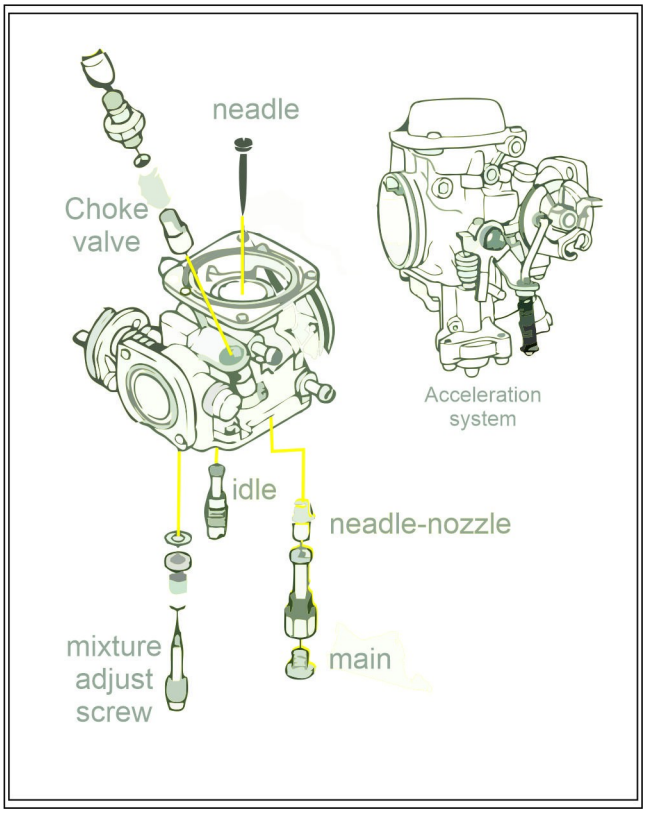
5.09. Influenz of the individual mixture system „NEW“







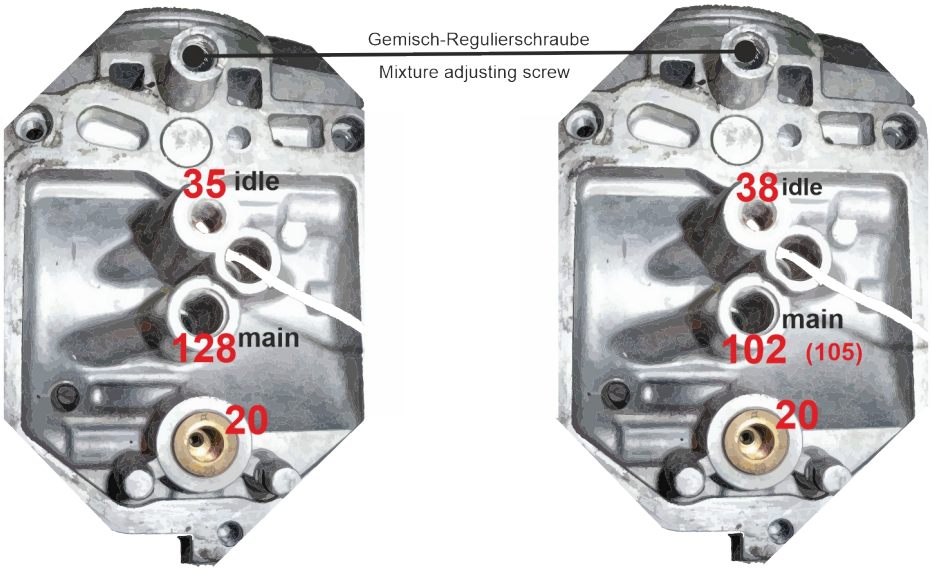
5.10. Carb nozzles Keihin VE „NEW“



carb nozzles

1986
VE 08 E A Y H 7

1996
VE 37 G A J I
Germany



6. Engine disassembly installation

7. Cylinder head valves

8. Cylinder piston

9. Clutch shift linkage

10. Alternator starter

11. Crankshaft gearbox

12. Front wheel steering

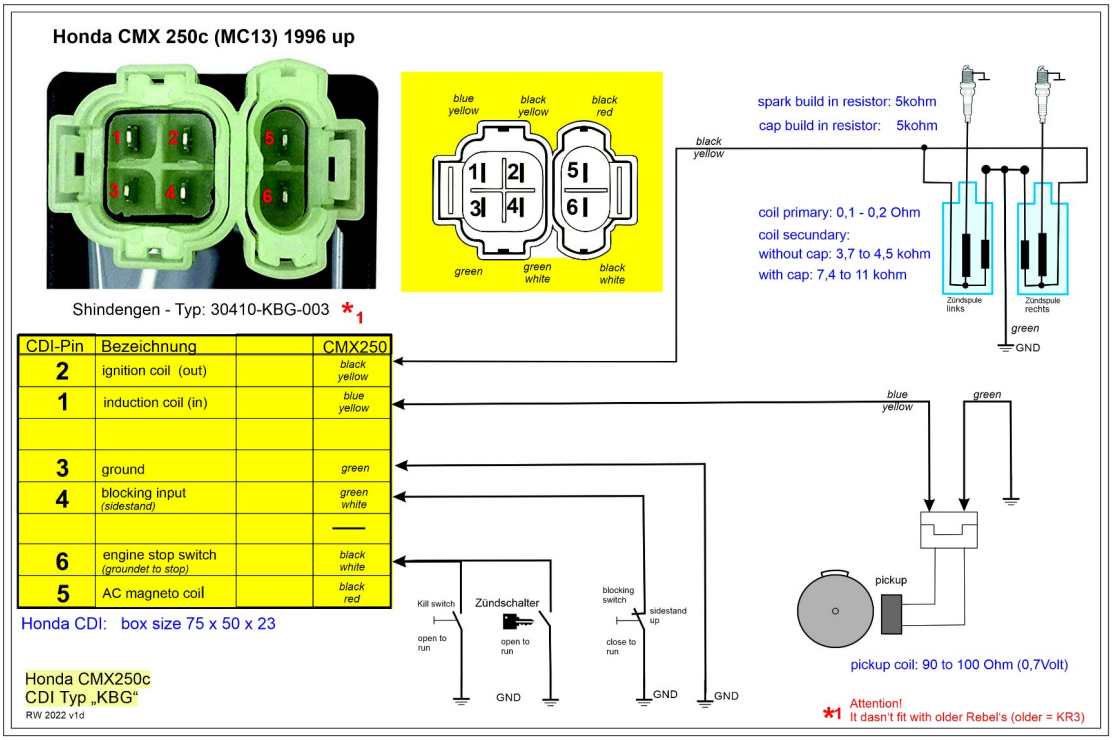
13. Rear wheel brake

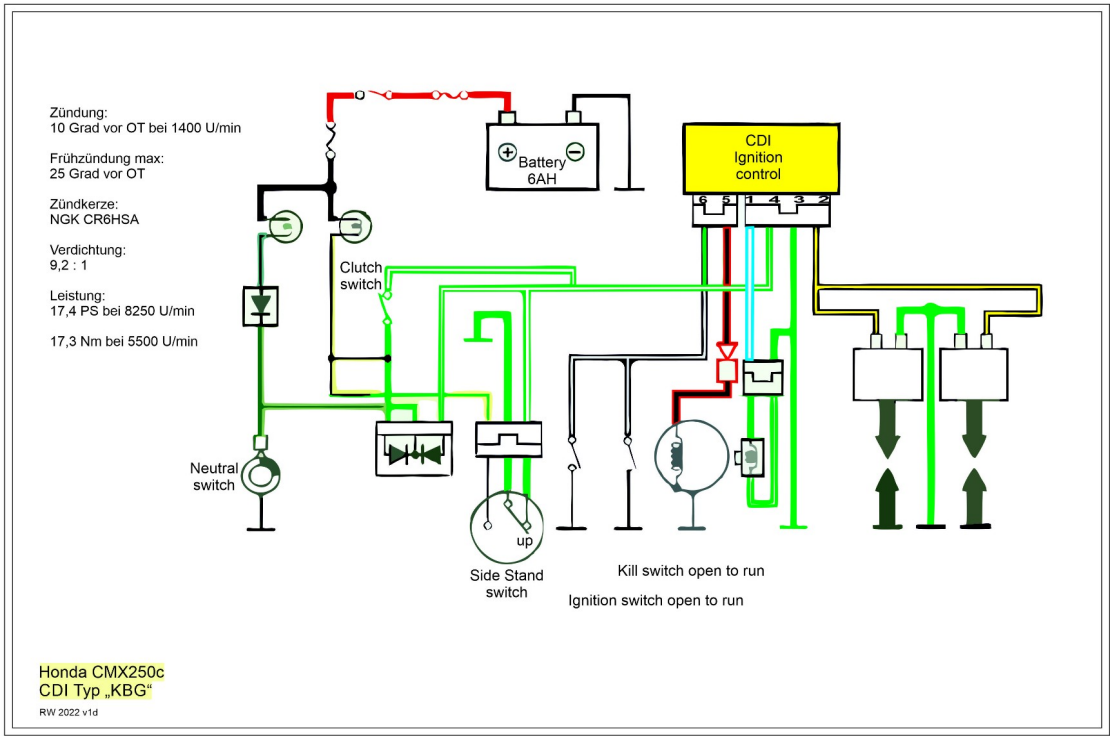
14. Hydraulic brake

15. Battery charging system

16. Ignition system „NEW“

16.1 Wiring diagram of CMX250 ignition





16.2 Pinout of CDI 1986 (KR3) und 1996 (KBG)

Honda CMX 250c (MC13) 1996 up

Typ: 30410-KBG-003

CDI-Pin	Bezeichnung	CMX250	
1	induction coil (in)	*blue yellow*	
2	ignition coil (out)	*black yellow*	
3	ground	*green*	
4	blocking input *(sidestand)*	*green white*	
5	AC magneto coil	*black red*	
6	engine stop switch *(groundet to stop)*	*black white*	

Honda: box size 75 x 50 x 23

Honda CMX 250c (MC13) 1986

Typ: - - KR3 - -

CDI-Pin	Bezeichnung	CMX250	
1	induction coil (in)	*blue yellow*	
2	ignition coil (out)	*black yellow*	
3	ground	*green*	
4	ignition coil (out)	*black yellow*	
5	engine stop switch *(groundet to stop)*	*black white*	
6	AC magneto coil	*black red*	

Honda: box size 65 x 42 x 23

17. Electric starter

18. Instruments switch

19.

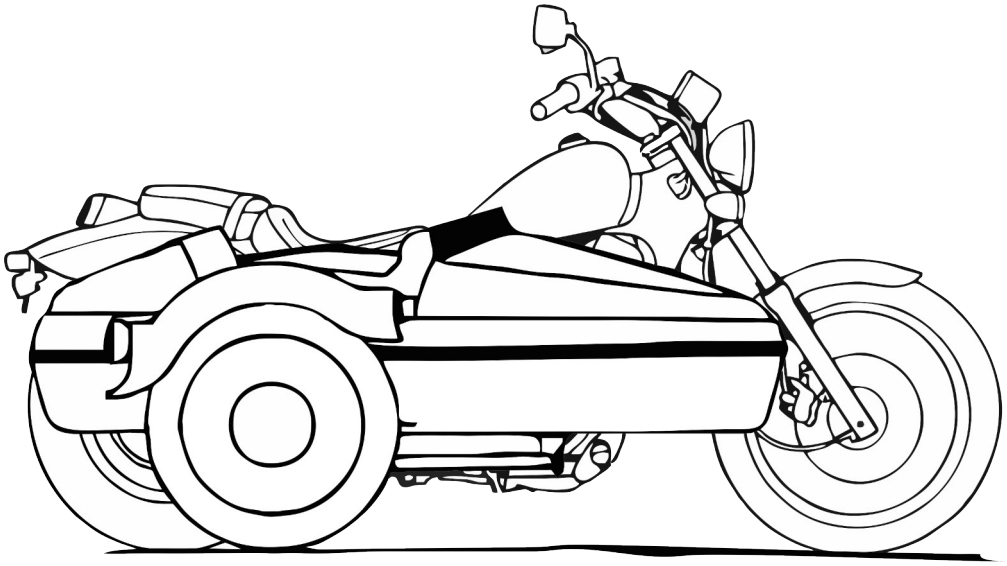
20.

21. Workshop and tools „NEW“

21.1 Special tool for the Kontrollstopfen

22. Motorcycle sidecar „NEW“

22. Honda CMX250c with sidecar Velorex 562 „NEW“



Foreword to the Honda-Velorex Sidecar

Dear sidecar friend, dear Honda friend !

This instruction manual for the Velorex-Honda CMX 250 sidecar is intended to provide additional information and instructions for the operation of this Honda sidecar which are not contained in the operating instructions for the motorcycle. included with the motorcycle.

The light Velorex type 562 is used as sidecar. Beside the favorable price, the Velorex sidecar has the advantage that it is not necessary to make extensive to make extensive adjustments to the suspension and frame of the motorcycle. of the motorcycle.
Due to its low weight (approx. 70 kg) and its easy suspension you can e.g. for maintenance purposes the sidecar relatively simply within within approx. 20 minutes.
All Velorex models have a polyester / GRP boat. The frame consists of a tubular steel frame (d=36mm) construction with a "four-point" connection.
The 16" spoked wheel has a 160mm drum brake.
The operation of the vehicle requires that the instructions given here be for the appropriate use, that the valid legal conditions are observed and that the and that the vehicle has been inspected by the technical inspection association and that the vehicle has been approved for public road traffic.

Please note that the installation of non-standard spare parts and accessories will invalidate the operating permit expires.

22.1. Technical data

22.2. Mounting instructions

The mounting of the vehicle combination must be carried out by a suitable specialist company.
This ensures the operational and road safety of the Honda CMX-Velorex
hitch is ensured.
The prerequisite is the use of a modified Honda CMX 250
machine and the Velorex 56 sidecar modified for mounting on this motorcycle.
Velorex 562 sidecar

22.2.1 Features of the CMX 250 motorcycle

The motorcycle used for the sidecar is a modified Honda CMX 250
Rebel (MC13) is used.
Modifications and preparations on the motorcycle:

- Telescopic fork with modified compression springs.
- Fork stabilizer (picture 1)
- Hydraulic steering damper incl. mounting
- Suspension struts with sidecar operation approval (HCS)
- Cross tube (1) on frame under seat (Fig. 2)
- Connecting lug (2) on top of right frame
- Connector (3) for electrical system
- Fixing lug on rear frame, bottom
- No blinker lights on the right side of the motorcycle
- Secondary gear ratio 13/33 teeth

22.2.2.

22.2.3. sidecar attachment

Prerequisite:

- Honda CMX motorcycle prepared as sidecar
- Velorex 562 - sidecar
- All connecting parts must be provided with antifriction and anti-corrosion agents.

22.2.3.1 Sidecar preparation

Unpack the sidecar and complete as follows:

1. install the sidecar wheel, secure the fastening nut
   (split pin or self-locking nut) and press on the hub cap.
   The sidecar wheel must turn easily. 2.

2. attention ! between sidecar swing arm and brake counterholder
   install a washer 20.1/25 1 to 1.5 thick.
   The brake shoes must not rub

3. pre-assemble struts

22.3. Operating instructions

22.3.1 General

The sidecar can be equipped with a dust cover and a lower windshield.
windshield can be equipped. If you drive almost exclusively without a

passenger, the windshield can be removed to reduce drag.

windshield to reduce drag.

The luggage compartment behind the seat back can be locked.

Always store luggage, especially heavy items, there or on the sidecar seat (protect upholstery!).

The hydraulic steering damper of the Honda sidecar reduces the design-related rolling motion at slow speeds.

To park the sidecar on a slope, first gear must be engaged.

In addition, the carriage can be secured with a suitable wedge.

22.3.2 Notes on driving technique

INTRODUCTION TO DRIVING A MOTORCYCLE SIDECAR

Riding a sidecar is quite different from using a solo motorcycle.
The solo motorcycle is "laid" or "pushed" into the curve by shifting the center of gravity sideways. Even if you are a seasoned motorcyclist with many miles of experience, you should consider yourself a beginner when learning to drive a sidecar combination. Most importantly, three-wheelers steer "backwards" compared to two-wheelers. And since motorcycle/sidecar sidecars are not symmetrical, they accelerate and brake differently in left-hand turns than in right-hand turns. Cornering tactics include learning to balance three and two wheels. We cannot stress enough the importance of acquiring knowledge and basic handling skills before taking a sidecar out on the public roads. Even experienced motorcyclists are well advised to learn basic skills off the road to ensure that surprises do not lead to accidents.

IMPORTANCE OF EDUCATION AND TRAINING

The only reliable tactic for avoiding injury while riding a motorcycle is to avoid accidents. While it is possible to gradually acquire accident avoidance techniques by spending many years in the saddle, there are many riding techniques and accident scenarios that do not come naturally. The

novice sidecar rider may not understand what happens during a maneuver, or may not have the control skills necessary to avoid an accident. The best way to quickly learn the basics of sidecar operation is to take a course, preferably a rider training course, led by a certified instructor who can supervise the exercises on an individual basis.

RISK ACCEPTANCE

The novice sidecar rider should realize that it is impossible to make any form of locomotion completely "safe." We cannot remove all risk from motorcycling, including sidecar operation. Each of us must take responsibility for our chosen mode of transportation, educate ourselves about the risks, and then take steps to manage those risks. If you intend to teach yourself to drive a sidecar combination without consulting a trained instructor, you should be aware that we cannot guarantee success.

THE RIDER, MENTAL ATTITUDE

It is important to understand that motorcycles can be dangerous. Every rider of a motorcycle, whether a two-wheeler or a sidecar combination, is exposed to potential risks. While it is not possible to eliminate all risks when operating a sidecar, it is possible to reduce the risks by adopting a cautious mindset, mastering sidecar handling and wearing protective clothing.

A key to avoiding accidents is to be constantly aware of what is happening on the roadway. Risk reduction begins with viewing sidecar combinations as serious vehicles that require knowledge and skill, even if the sidecar combination is only occasionally driven in the neighborhood.

Experienced drivers make it a habit to constantly check the road for road for potential hazards and take steps to avoid problems before they get too close to avoid.

The motto: " keep your eyes open, drive well".

Paying attention to road conditions requires a clear mind, so the wise driver avoids drugs that could impair vision, hearing, or judgment.

Even if a sidecar rider is doing everything right, an accident can still occur.

Motorist may not expect a motorcycle or may refuse to yield the right-of-way. A sidecar rider may be traveling at a speed appropriate for traffic and still overturn on a misapplied curve. A deer could jump onto the roadway or cargo could be thrown from a truck.

22.4. maintenance and care

The Velorex 562 sidecar requires relatively little maintenance. Before each ride, check the
and roadworthiness should be checked before each ride. This includes above all the
the strength of the sidecar connections, the correct functioning of the brakes,
the correct tire pressure and the functioning of the electrical system.
The joints of the mechanical parts of the braking system and the brake connections
in the brake counterholder must be lubricated at the same intervals as the comparable
parts on the motorcycle.
The brake cable of the sidecar is low-maintenance due to its Teflon coating.
Due to the greater load in sidecar operation, the drive chain must be adjusted at shorter intervals.
drive chain must be adjusted at shorter intervals. In case of wear
always replace the chain, sprocket and sprocket wheel.
If the sidecar is also used in winter in snow and ice,
protection from winter maintenance agents must also be provided for the sidecar.
Removing and attaching the sidecar to facilitate maintenance work on the motorcycle is
on the motorcycle is possible by loosening the four connecting struts,
after the plug connection of the electrical system has been disconnected.
Of course, when reassembling the sidecar, all the connecting screws must be
must be re-tightened to the specified torque and secured.

22.5. repairs / maintenance

For the professional execution of repairs, it is essential to consult a motorcycle or
specialist motorcycle or sidecar repair store.

23. Links – usefull for Rebel owner