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PUBLICATIONS

Zündapp KS 750

in detail[®]

Zündapp KS 750
with sidecar
in Czech Private
Collections

František Kořán
Michal Barlan

PHOTO MANUAL FOR MODELERS[®]



Special Museum Line
n° 15

WWP[®]

WINGS & WHEELS
PUBLICATIONS



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**NEXT ISSUE
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Zündapp KS 750 in detail[®]

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This publication would never have been completed without the help of Mr Michal Zajíc of Úvaly near Prague and Mr Vladimír Lehár of Zvole near Šumperk.

Front cover:

Zündapp KS 750 of owner Mr Vladimír Lehár of Zvole near Šumperk.
Photo © František Kořán 2000.

Rear cover:

Zündapp KS 750 in Uvaly near Prague.
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First page:

Zündapp KS 750 of owner Mr Michal Zajíc of Úvaly near Prague.
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Reference and further information could be found in following titles:

Rauch Siegfried, Sengfelder Günter - Zündapp KS 750,
Das deutsche überschwere Gespann mit angetriebenen Seitenwagenrad,
Schrader Verlag, Stuttgart 1996
Ansell David - The Illustrated History of Military Motorcycles,
Osprey, London 1996
Hinrichsen Horst - Kräder im Einsatz 1934 - 1945,
Podzun-Pallas, Wölfersheim-Berstadt 1995
Hinrichsen Horst - Kräder der Wehrmacht,
Podzun-Pallas, Friedberg 1993
Bacon Roy - Militärmotorräder 1939 - 1945,
Motorbuch Verlag, Stuttgart 1987
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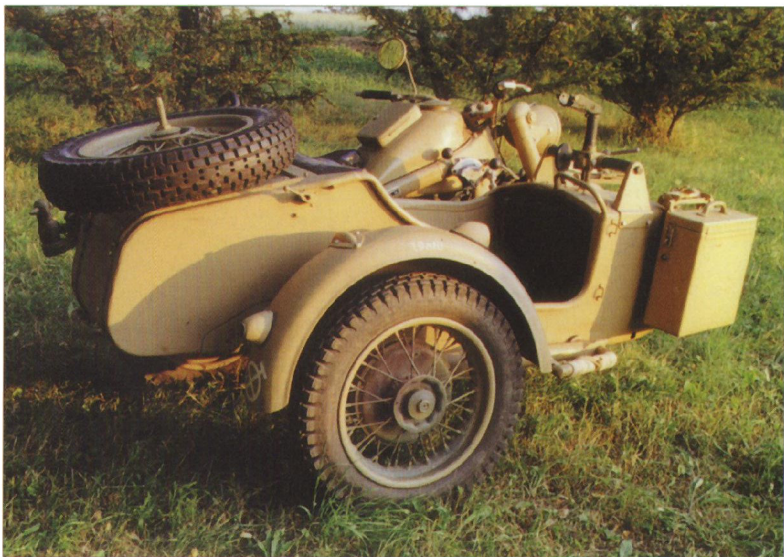
Walk Around



German company Zundapp located in Nuremberg started a series production of motorcycles in the year 1922. The first motorcycle type in production was a machine without shifting gear and with a two stroke engine with a capacity of 211 cubic cm and power output of 2,6 KW. Later in 1925 new series of motorcycles with an 249 cubic cm engine and power output of 3,7 KW with three speed shifting gear started to roll off the production lines. The first four-speed motorcycle was produced in 1930. This motorcycle with 500 cubic cm one cylinder engine originated from a British Rudge company. 1933 models included new elements, these included pressed frame from sheet-metal, rear wheel drive with cardan shaft and boxer types engines. In the same year a motorcycle with a series number 100.000 rolled out off the production lines of Zundapp company. German Army at that time had chosen the first Zundapp motorcycle and included it in its ordnance. This type was known as K 500 W equipped with two cylinder engine with 498 cubic cm and an output power of 12 KW. This motorcycle was used by troops as solo motorcycle as well as with a sidecar. Later German Army accepted a popular type motorcycle known as DB 200 W with one cylinder two-stroke engine with 198 cubic cm and power output of 5 KW. In mid thirties the German Army accepted a third type, the K 800 W with four cylinder boxer type engine with 791 cubic cm and power output of 16 KW. Last pre-war production type was the heavy boxer type KS 600, a further development of K 500. This type lead directly to the most famous type of motorcycle ever produced by Zundapp company the KS 750.

Re-introduction of compulsory military service in March 1935 increased needs for motorcycles within the German Army. Due to the fact that there was no motorcycle model in production destined directly for military purposes various civil types were incorporated by the army with minor changes and enabled military use. All motorcycles in the army received cross-country tyres, map bags and military camouflage painting. This was the case of all above mentioned Zundapp civil motorcycles. Among the most widely used type ranked the KS 66 W type. 18 000 units were delivered to Wehrmacht.

Walk Around







Situation changed in mid 1941. During this time two types of motorcycles specially designed for hardest military service in WW II started to reach the combat troops. Heerswaffenamt ordered their production not long before the outbreak of WW II. These were BMW R 750 and Zundapp KS 750. This publication covers the latter.

Driven wheel of a sidecar eased the cross country performance, additional heating for hands and feet comforted battle troops on the Eastern front and additional air filters helped troops in the North African campaign. First official news on both new types of motorcycles appeared in German press in May 1941. Design of KS 750 type passed through three basic stages. First design stage lasted from December 1937 till July 1938. In November 1937 OKH /Headquarters of the German Army/ meetings lead to an order of a new heavy type military motorcycle with a sidecar. Payload up to 500 kg, standart tyres 4,5 x 16, corresponding to those used on Kdf /VW 82 Kubelwagen/, max speed of a fully loaded motorcycle of 95 km per hour and minimum radius of 350 km were among the basic requirements. First trial changes were carried on K 66 W type. This project was named A162V59. As time progressed all major parts of original motorcycle were upgraded. This lead to several problems that were solved in the next stage of development. Second development stage took place between August 1938 till December 1939. This stage was characterized with intense discussions and consultations with army headquarters that initiated major redesignment. The most significant requirement was for a driven sidecar wheel, gearing enabling reverse drive, increased engine volume between 700 - 750 cubic cm and last but not least a new front driving fork. Based on these requirements Zundapp company produ-

Walk Around

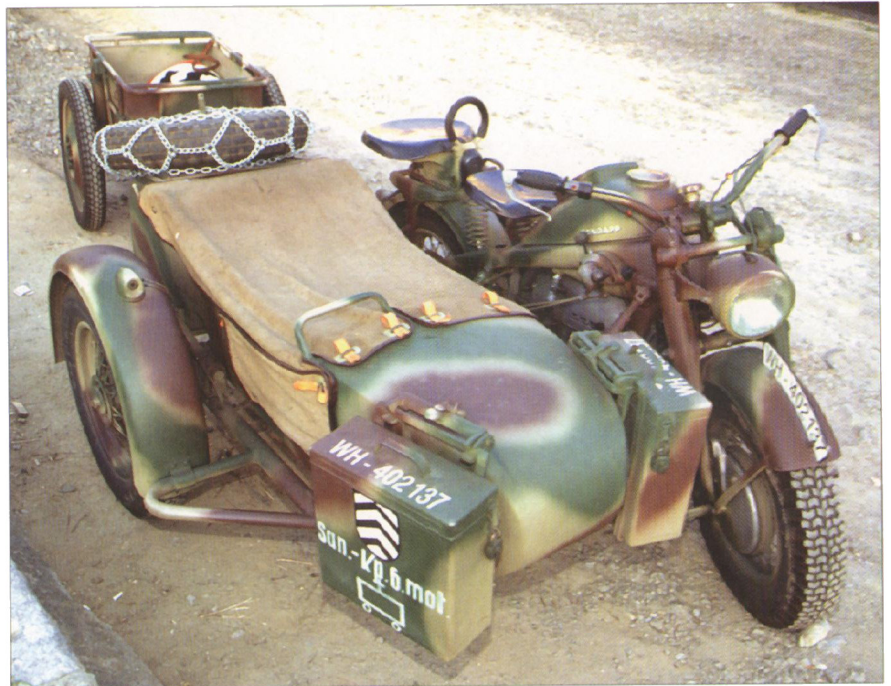


ced a model of such a motorcycle in real size and later two prototypes of KS 700 that resembled the KS 750. These prototypes passed hard tests together with BMW motorcycles. Result of these tests was that Zundapp prototypes were found superior to those of BMW. Such results lead to an unprecedented suggestion - BMW should include some of the modern construction features of Zundapp in its production models. Management of BMW refused such a proposal but upon orders from army headquarters several construction features were unified in important details. These unified details included equipping BMW motorcycles with gearing shutter, engine changes from SV to OHV and introduction of hydraulic brakes system for rear wheel. What differentiated both models were their engines. BMW used classic float-twin with cylinders facing each other at 180 degrees, Zundapp used an engine with cylinder in "V" shape though at very flat angle of 170 degrees. Last development stage took place between January 1940 and May 1941. This development stage was characterized by several changes in designs that followed as a consequence of prototype tests. These tests took place in Austrian Alps. The development terminated in May 1941, combat troops did not receive Zundapp KS 750 in substantial numbers before the fall of that year. The result of a long development and heavy-duty trials was an outstanding motorcycle that passed all demands for a military motorcycle for early 40s destined for a field service in difficult terrain. The motorcycle was equipped with truck tyres and bulk brakes that enabled passing down the slopes. Front mechanical and both rear hydraulic brakes were used. The OHV engine had a fully covered valve mechanism that enabled the motorcycle highest speed of 95 km per hour. Gear box contained shifting for road as well as cross-country performance. Handle located on the right side of fuel tank next to the shifting gear /shifting was possible by foot as well/ enabled selection of up to four speeds for road and cross-country drive. Reverse corresponding to first gear was used for rear drive. Suitably selected gearing enabled the motorcycle to drive in columns at speed between 3 to 3,5 km per hour. Rear wheel was driven via cardan shaft. The superior cross country performance was due to cardan shaft drive of the rear wheel that simultaneously drove the sidecars wheel as well. Distribution of both driven wheels revolutions was effected via gearing dividing driving force between them. Extra handle located below drivers seat enabled to lock the gearing and to prevent one wheel from slipping in terrain. But after passing through a difficult terrain it was absolutely necessary to return the handle to its former position as locked gearing limited motorcycle handling. At the beginning motorcycles were equipped with BW 40 sidecar, later with BW 43. Together with BMW R 75 Zundapp KS 750 represented the top development of military motorcycles in WW II. Total production reached 18635 units by May 1945. /BMW R 75 - 16.500 units/.

NB: After WW II Zundapp company restarted motorcycle production only in 1949. A year later a second production line opened in Munnich. Production progressed till mid eighties. In 1984 Zundapp company declared bankruptcy. Equipment and production lines were bought by a chinese bicycle manufacturer from Tianjih.



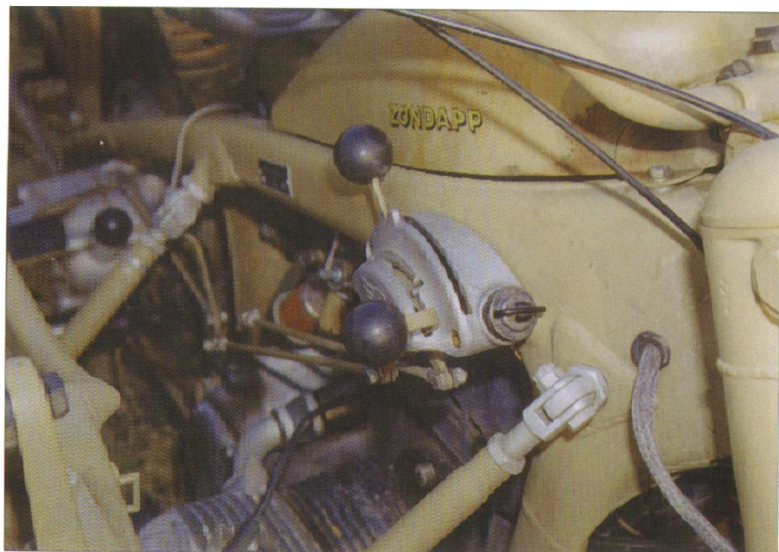
Zundapp KS 750 equipped with BW 43 sidecar, towing device and hanger. Marking and camouflage is an authentic reconstruction of a motorcycle that passed Uvaly village near Prague before end of WW II.



Insruments Details



Shifting gears: inner - handle for gear shifting, outer - handle for cross-country and/or road ride as well as for reverse. Starting knob located in front of shifting gear. Logo Zundapp located on side of a tool box. Hand brake is located on steering handles.



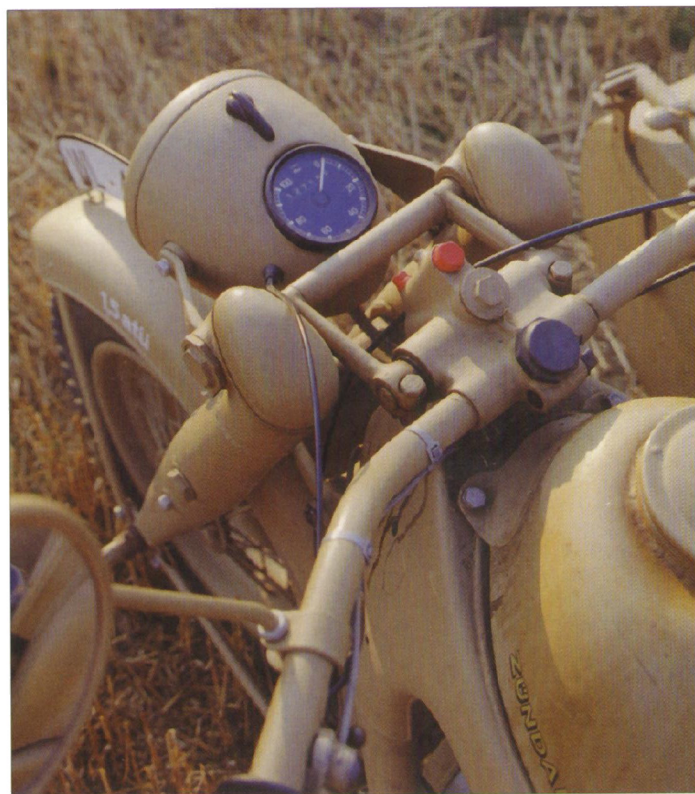
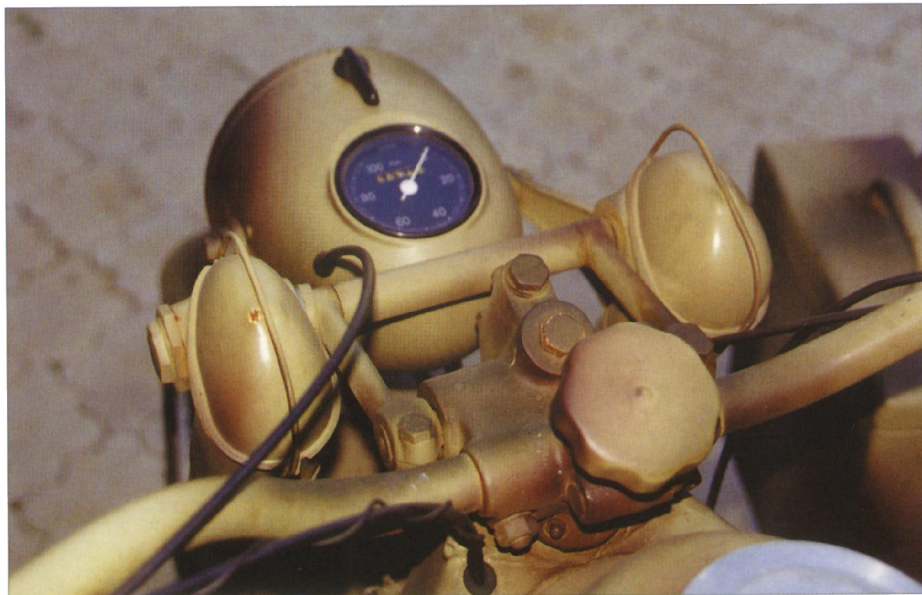
Upper photo - fuel tank with a capacity of 23 liters /including 3 liters of reserve/. Tool box fixed to a fuel tank. Lubricating plan of the motorcycle was found on the inner side of the door of the tool box.



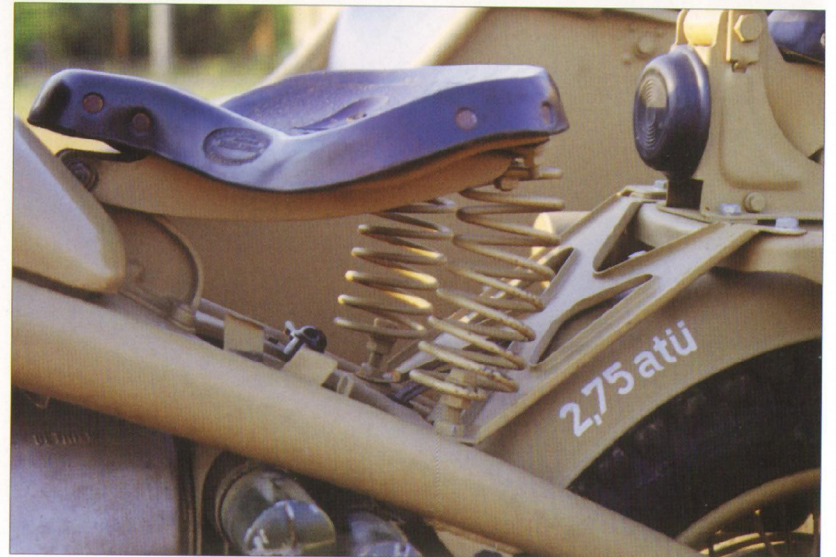
Lower photo - main light with light switch and speedometer Weigel.

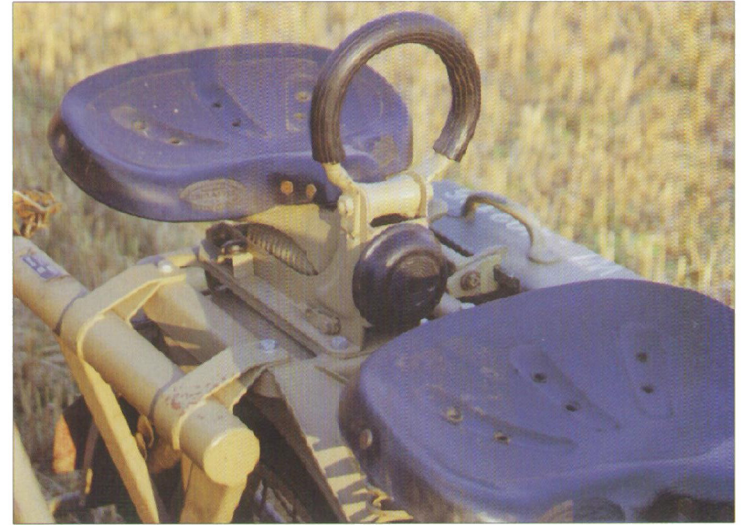
On both sides of main light there are covers of driving fork with oil shock absorbers.

On left side of steering handles - switch for long distance lights and push button for electric horn.



Seats

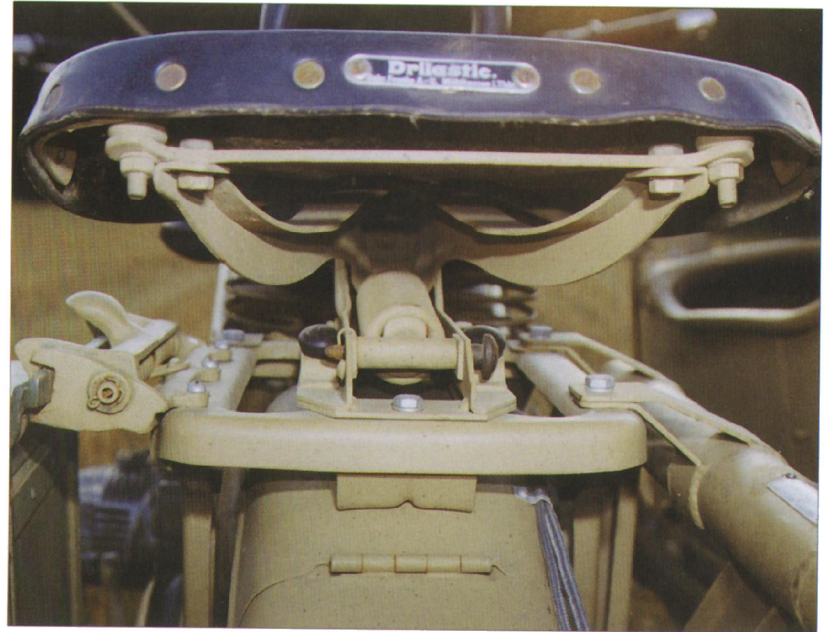




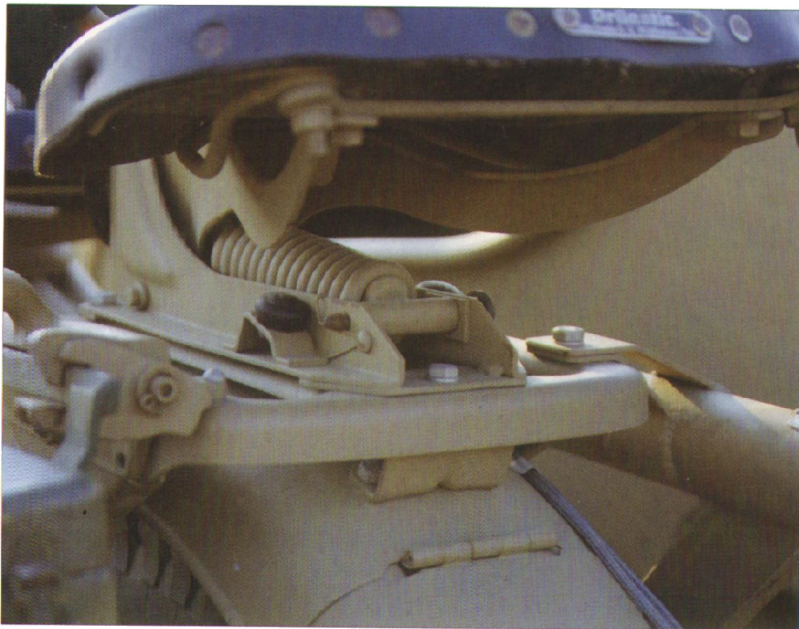
Motorcycles were equipped with various seat types produced by Drilastic company. Co-driver's seat was equipped with a rubber coated handle. Rubber block prevented driver from hitting co-driver's seat was fixed below handle.



Seats Details

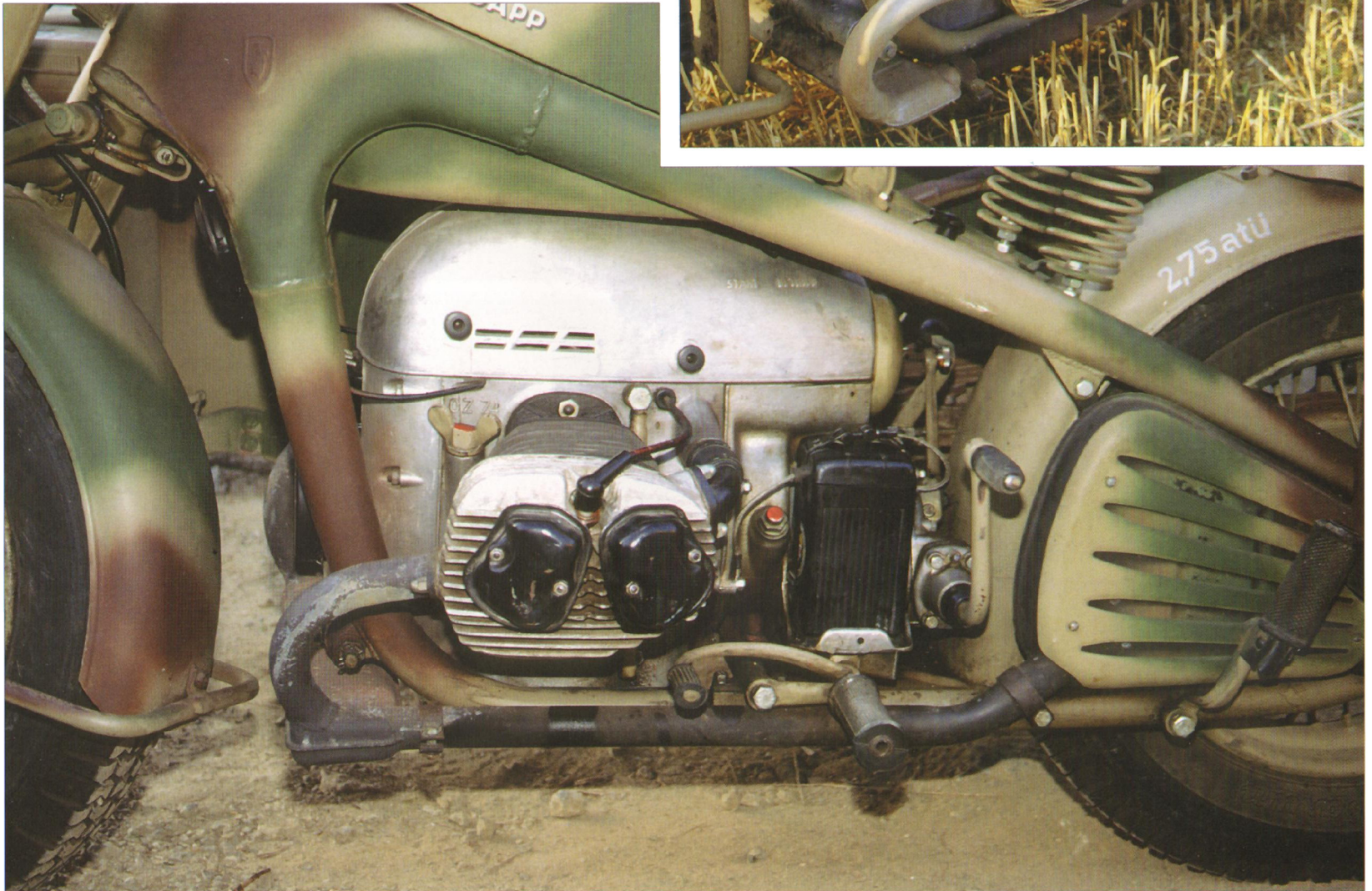
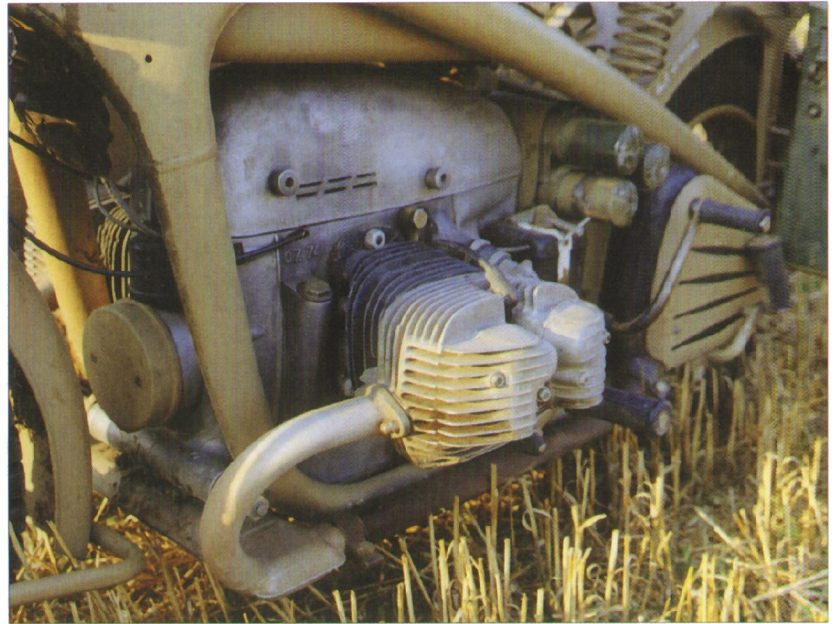


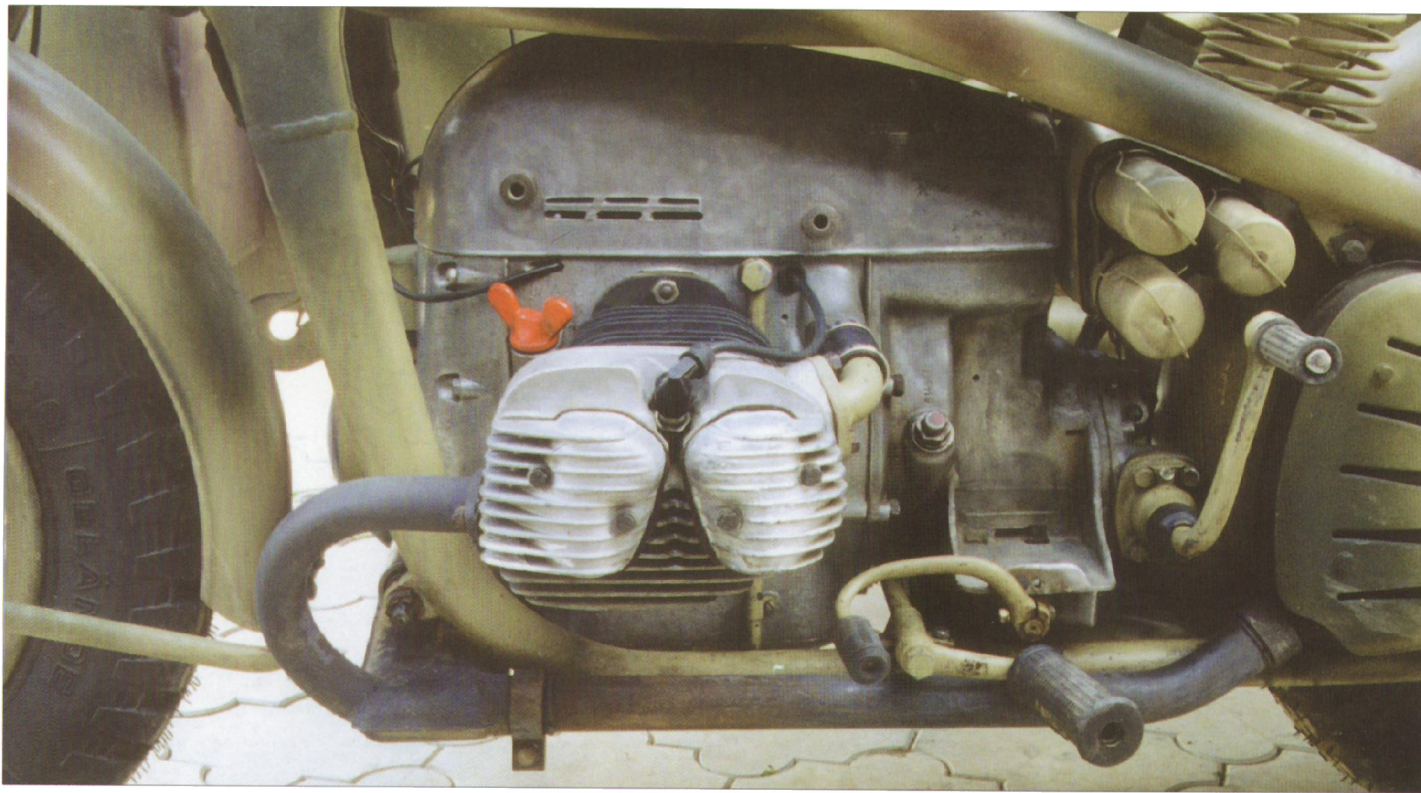
Swinging co-driver's seat was equipped with two upright springs. Co-drivers seat was fixed via two holders and vertical spring - photo below left.



Engine Details

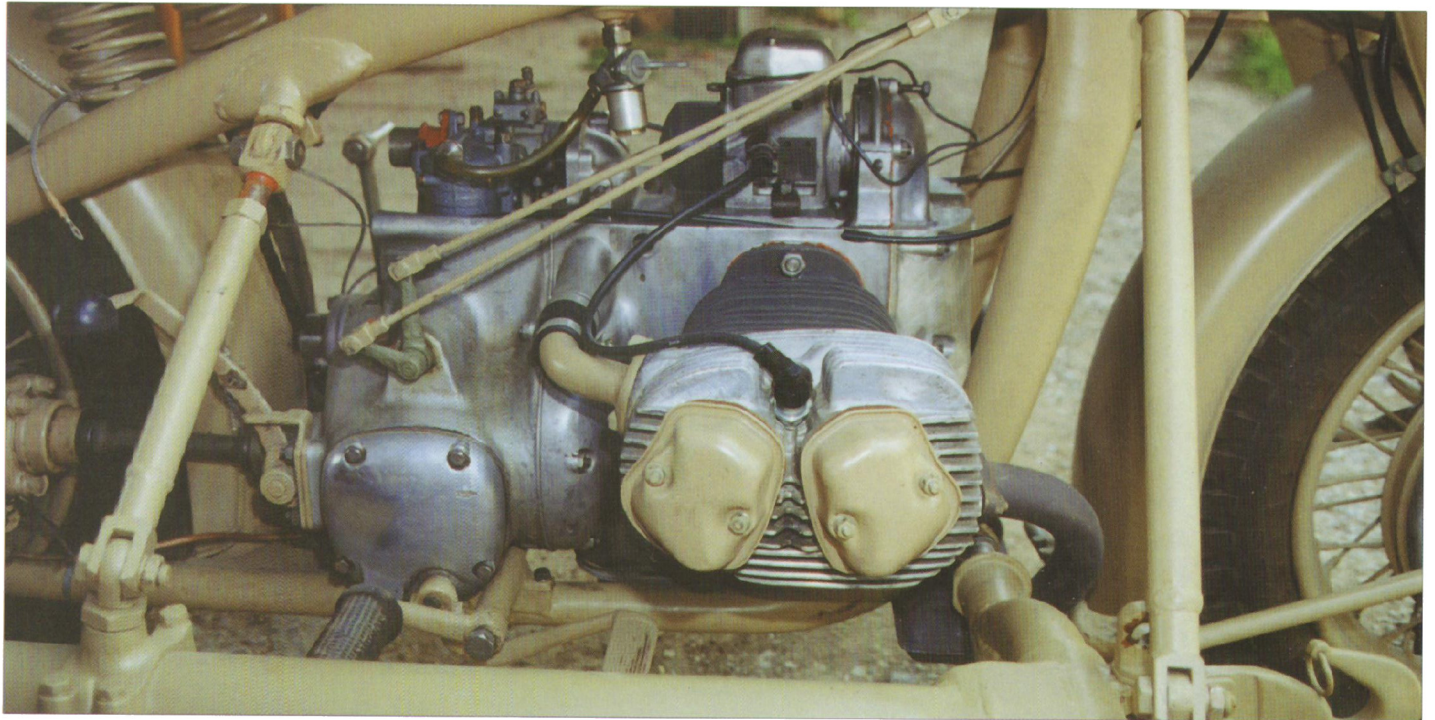
Zundapp motorcycle was equipped with two-stroke engine with gearing enclosed in engine block. A dynamo is fixed on engine block. Engine block had two cylinders protruding to both sides at an angle of 170 degrees. Below gearing and oil tank. Block is covered with two piece cover .



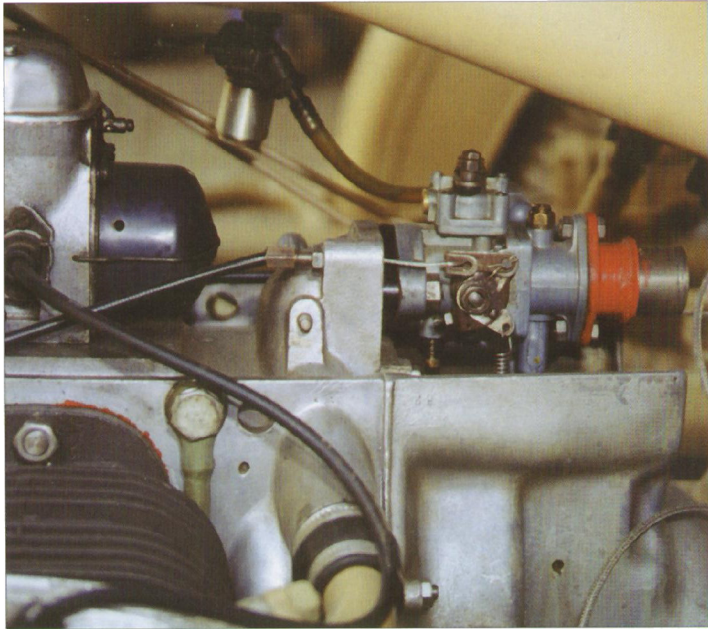


View of a left side of the engine. Cylinders have original covers of valve mechanism with cooling ribs. On the right side of cylinders there is gearing oil filling.

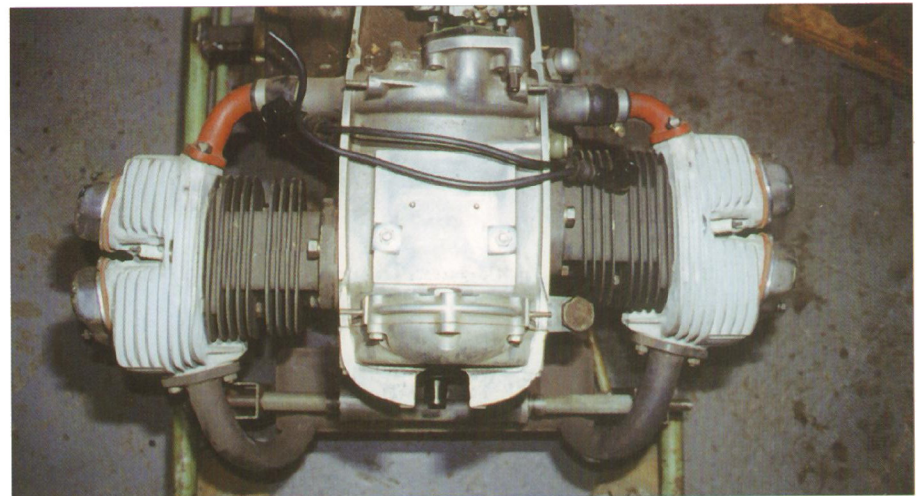
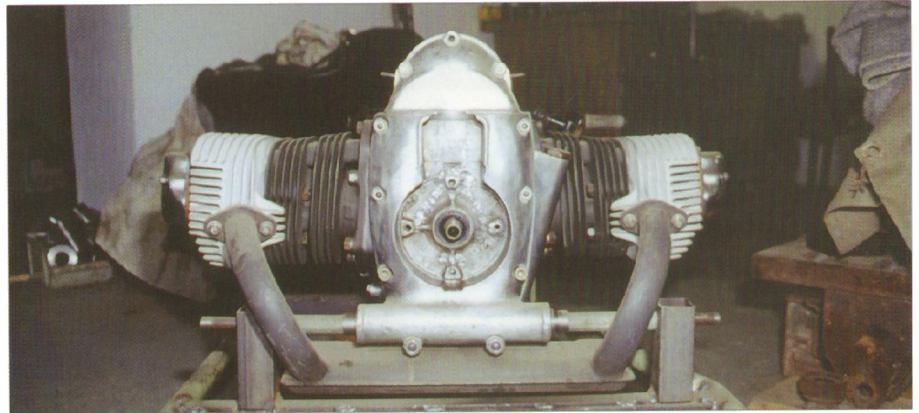
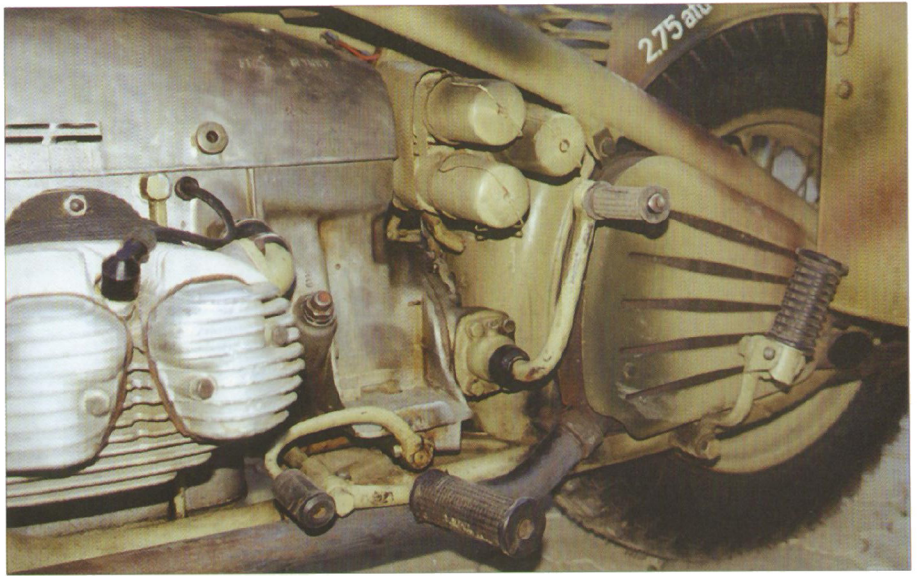
Right side engine view - cylinder equipped with simplified metal covers of valve mechanism from later production models. Engine has the cover off. Extreme left before fender there is a handle for differential locking. In front of handle - brake fluid container with filling cup. In front of foot rest - foot brake handle.



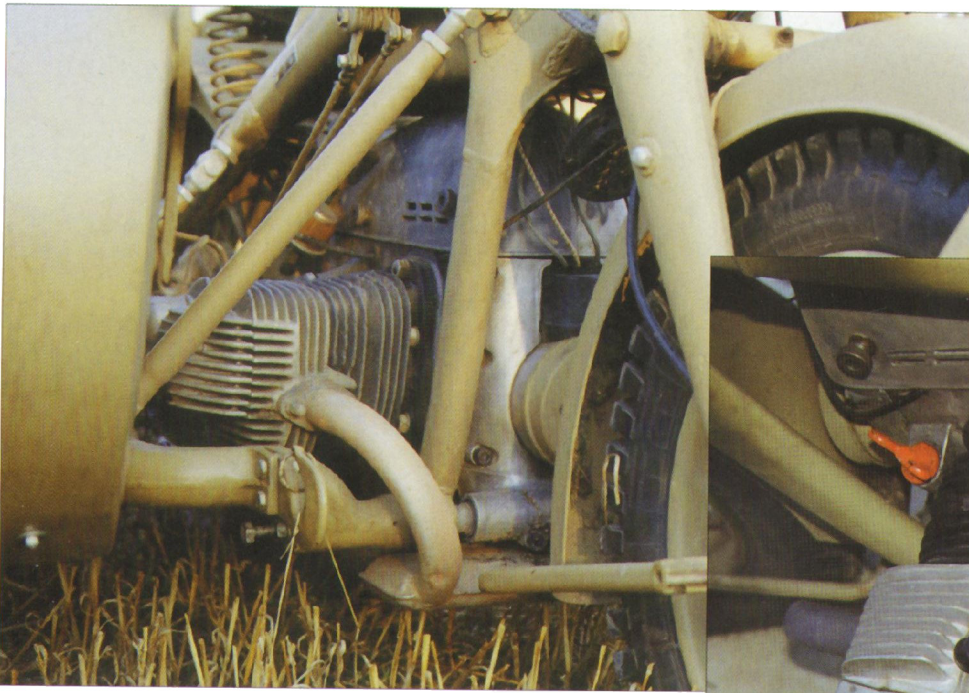
Engine Details



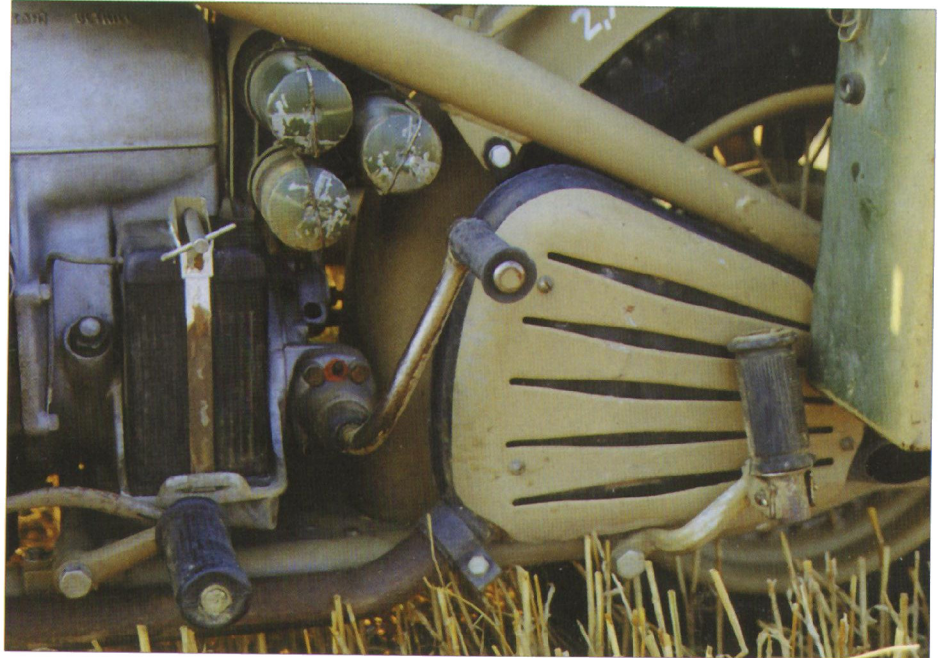
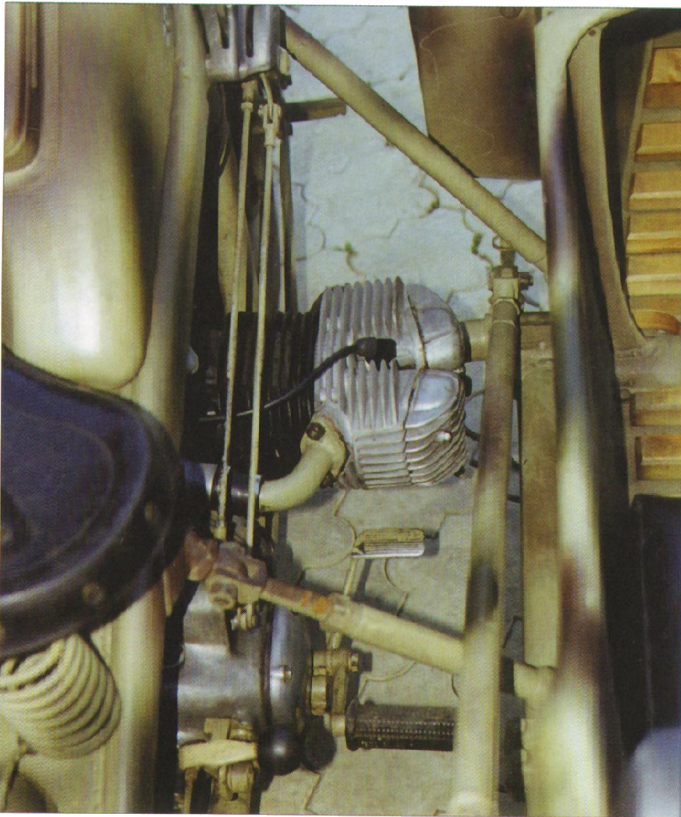
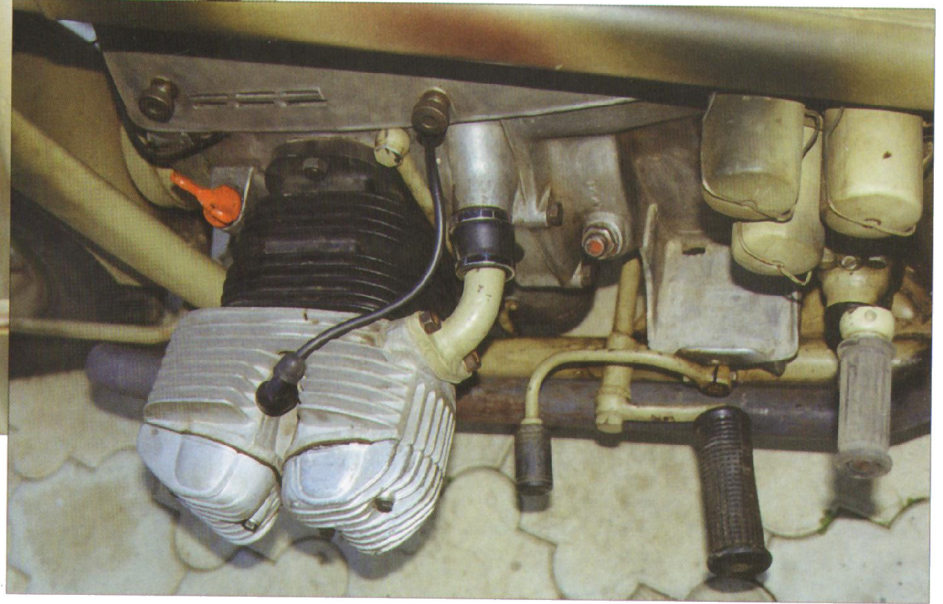
The following are found below removed engine cover - shaft, magnets, Bosch FJ 2 R and carburetter Solex 30 BRFH. Above carburetter fuel intake. Front view - dynamo fixing.



Engine Details

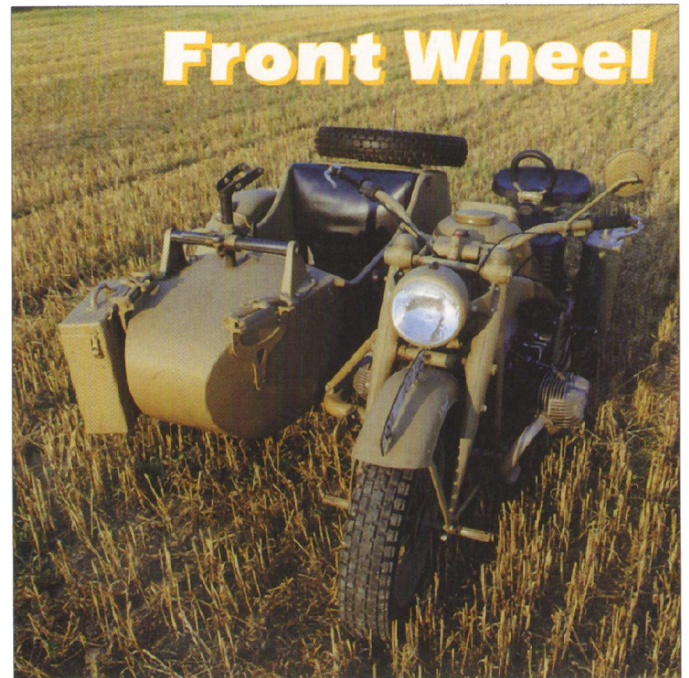


Spark plug with cable. Right upper photo shows piping for pumping of fuel into cylinder. Left upper photo - exhaust pipes. Right lower photo - 6 V battery with 7 Ah capacity. Exhaust pipe behind battery with horizontal holes.



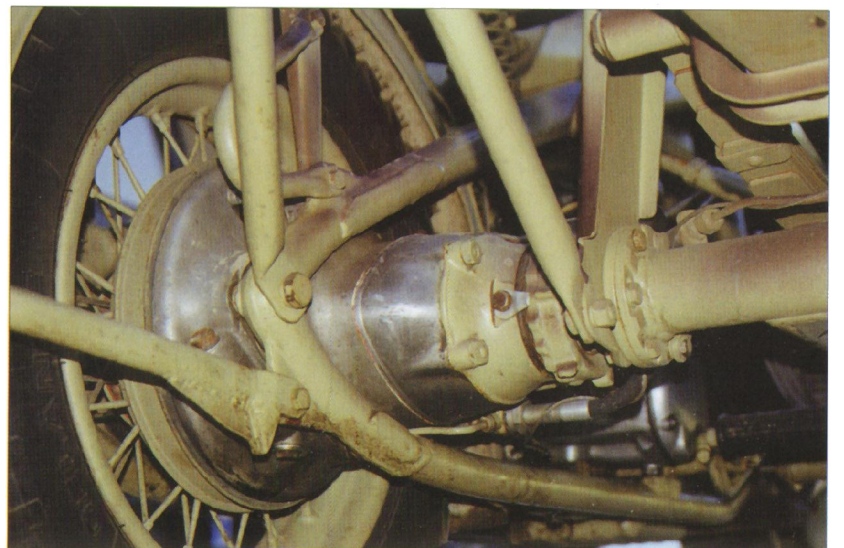
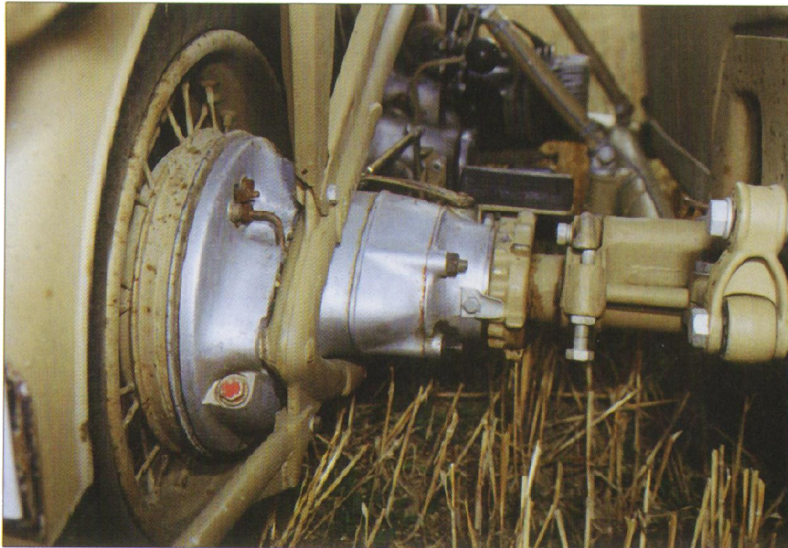


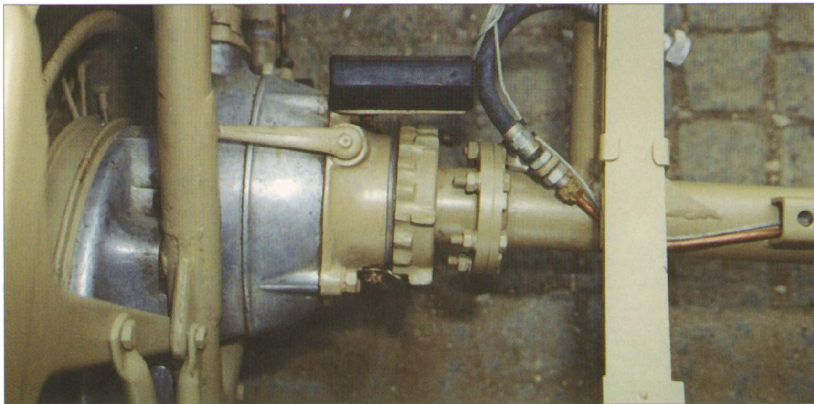
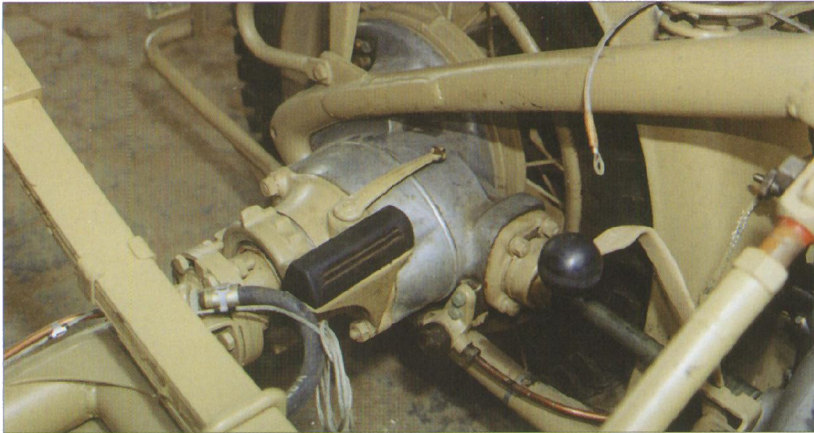
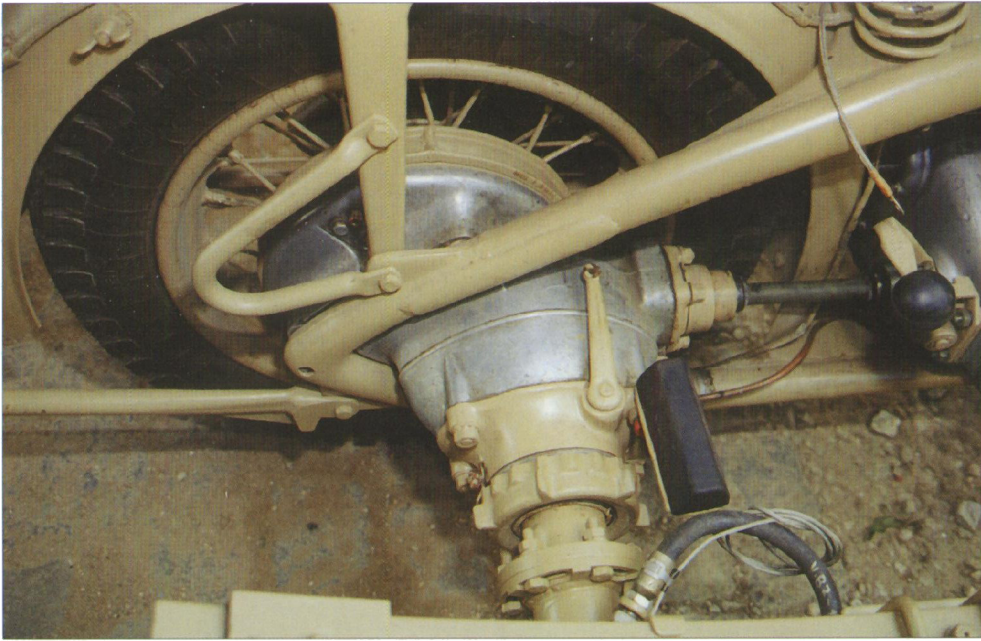
3,00D X 16 front wheel with 4,5 x 16 tyre. The wheel has mechanical drum brakes. 1,5 AtU inscription indicating tyre pressure prescribed.





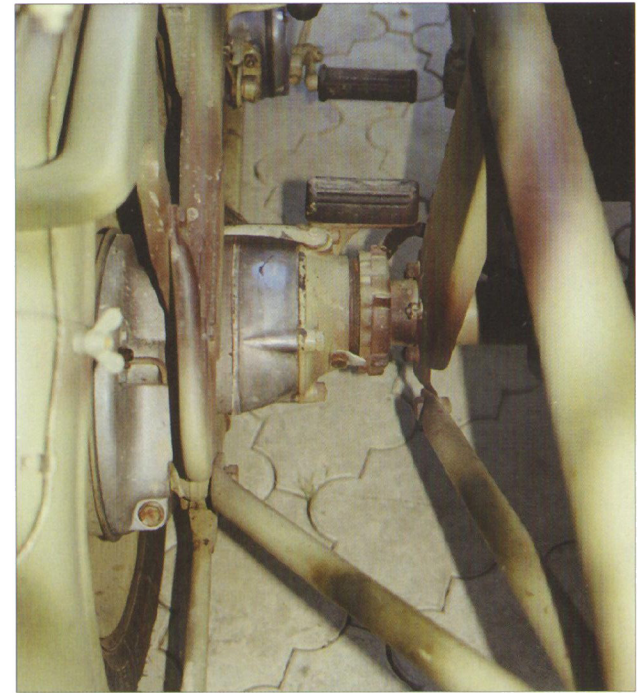
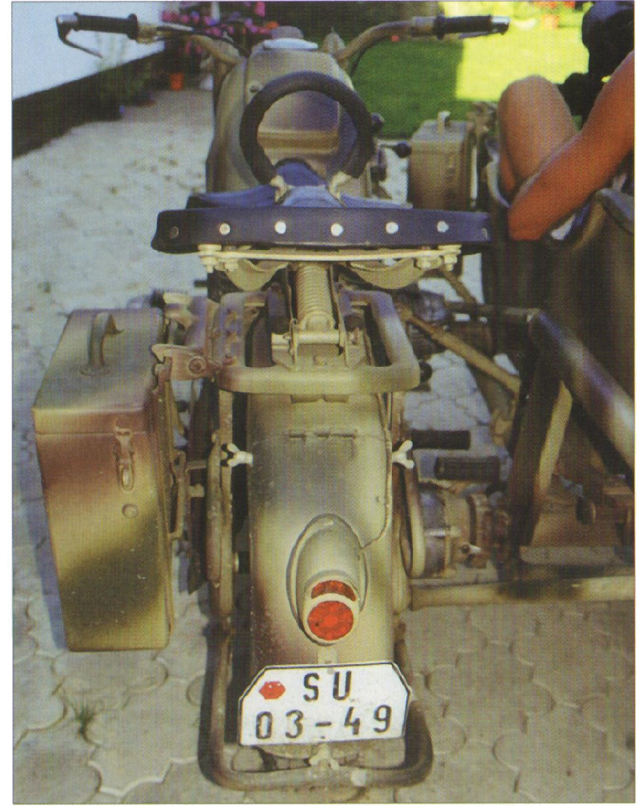
Overall view of towing equipment and fixing with the motorcycle.





Rear wheel of the motorcycle and sidecar was equipped with hydraulic brakes. Foldable fender enabled easier changing of a rear wheel.

Detail of powered rear wheel and differential. Facing front - cardan shaft, above locking of differential. Foot rest of a co-driver located on differential.



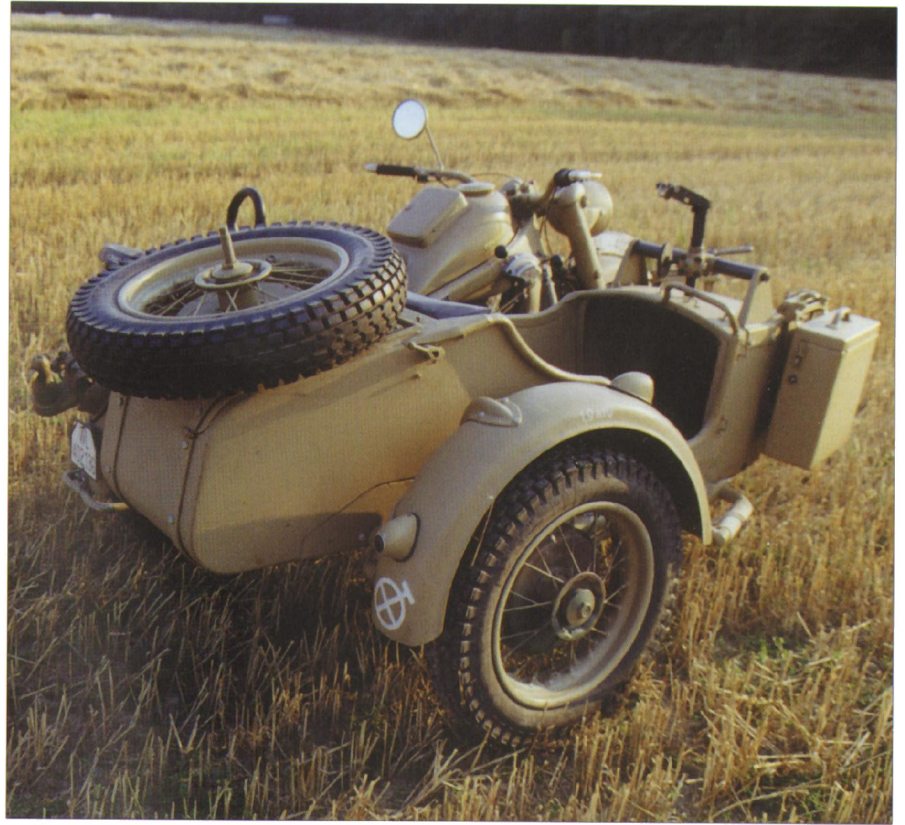


Two basic sidecars were used on Zundapp KS 750 . These were the BW 40 and BW 43 types. Main difference were in springs. BW used wind springs, BW 43 used spring leaves. Seat of a sidecar could be covered by canvas. Behind the seat a voluminous storage space was found.

Sidecar Details

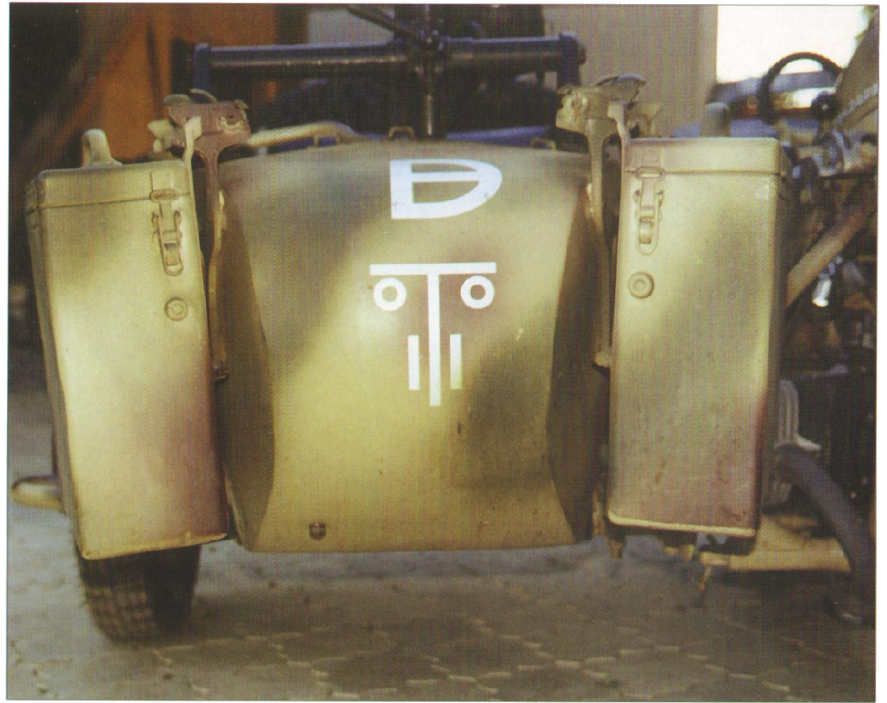






Sidecar Details

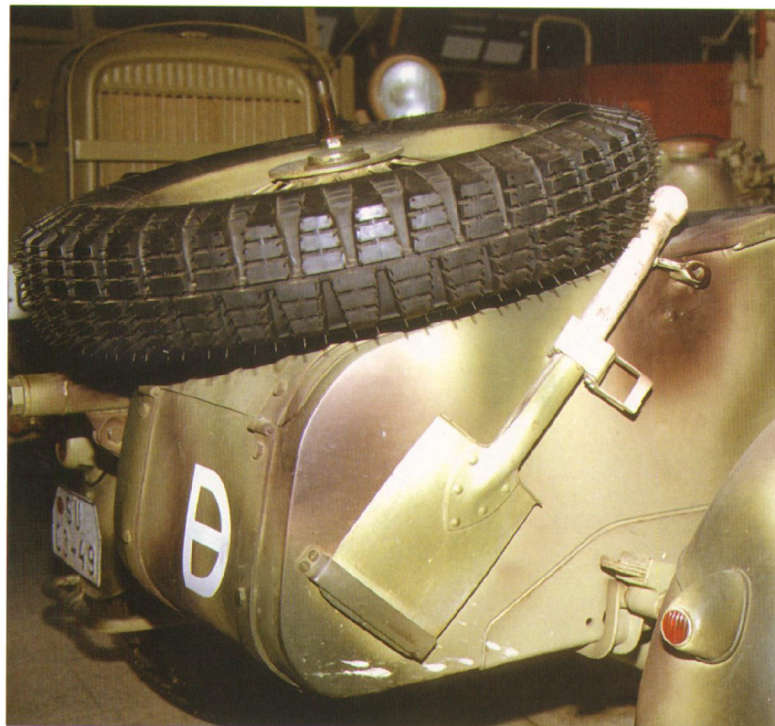
Various manufacturers produced sidecars and these differentiated in minor details. A detail view shows fixing of ammunition boxes of MG 34 machine gun. On right side a wooden floor.



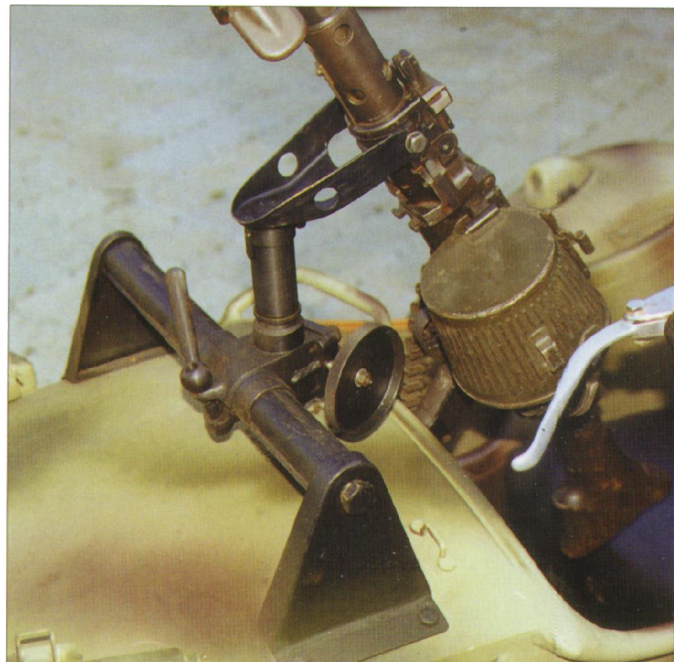
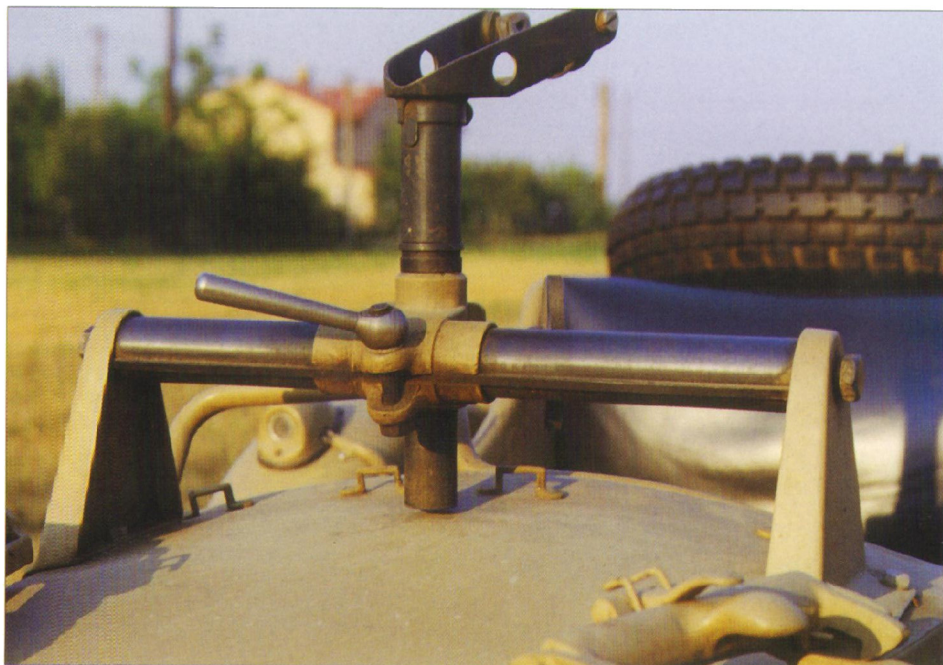
The most famous manufacturer of sidecars was Steib company. All motorcycles were equipped with three map bags on sides of a sidecar. Third was located on left side of a motorcycle behind second seat. First series used leather bags, later metal bags were used.

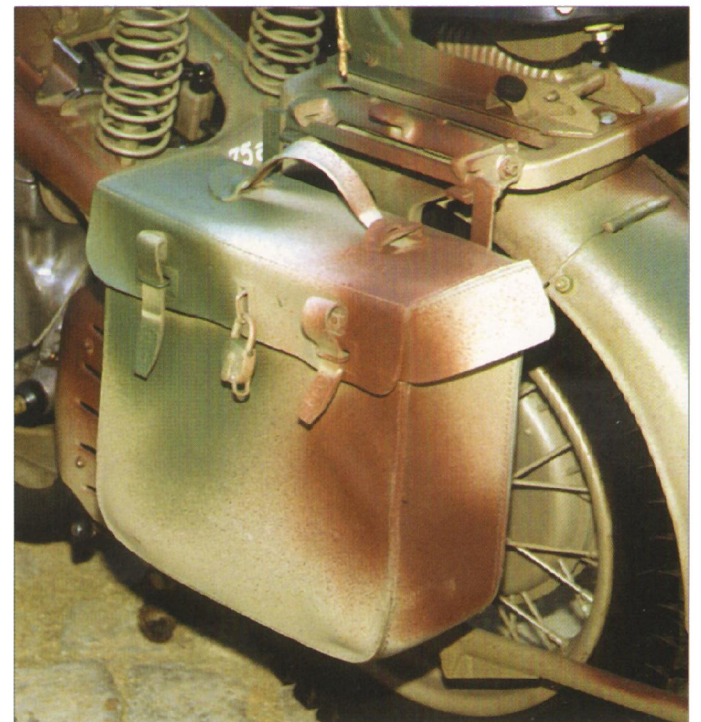


Sidecar Details

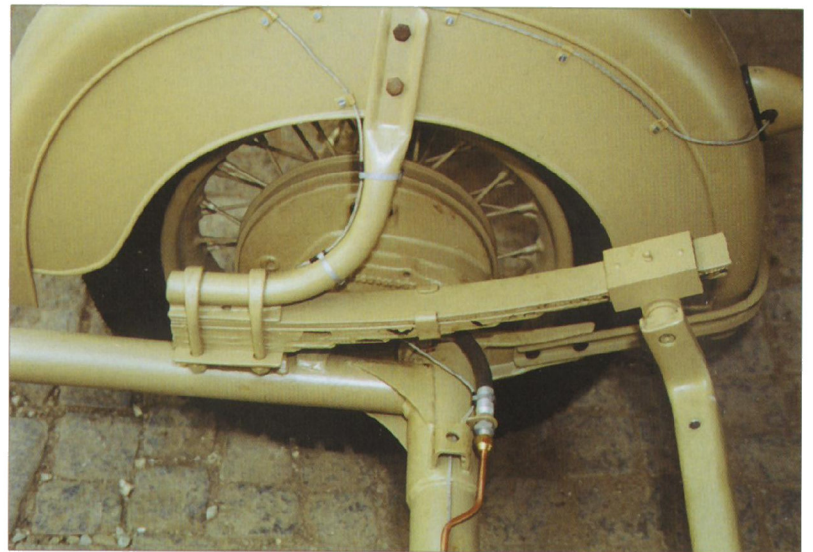
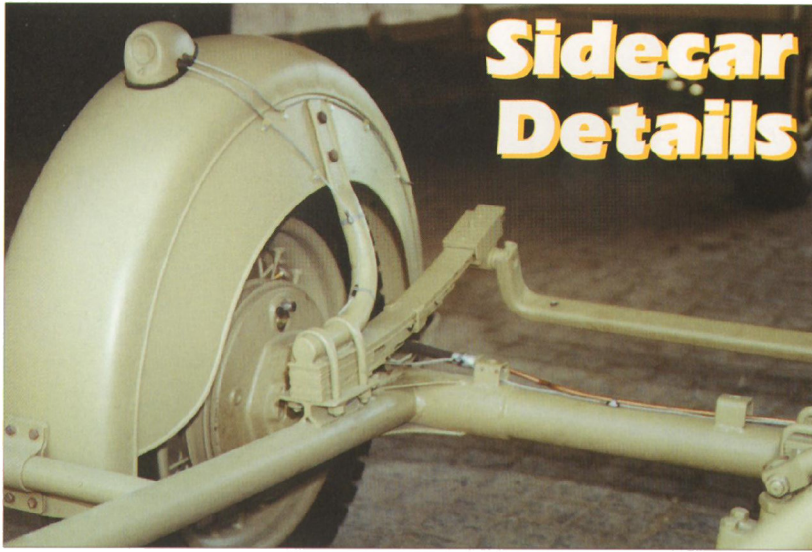


Some sidecars were equipped with a MG 34 holders. These enabled machine gun to be used while riding. Ballance used with this holder was so effective that the MG 34 was almost in equilibrium and so very easy to use. Some sidecars used jerry cans, communication equipment etc. as extra stowage and equipment.





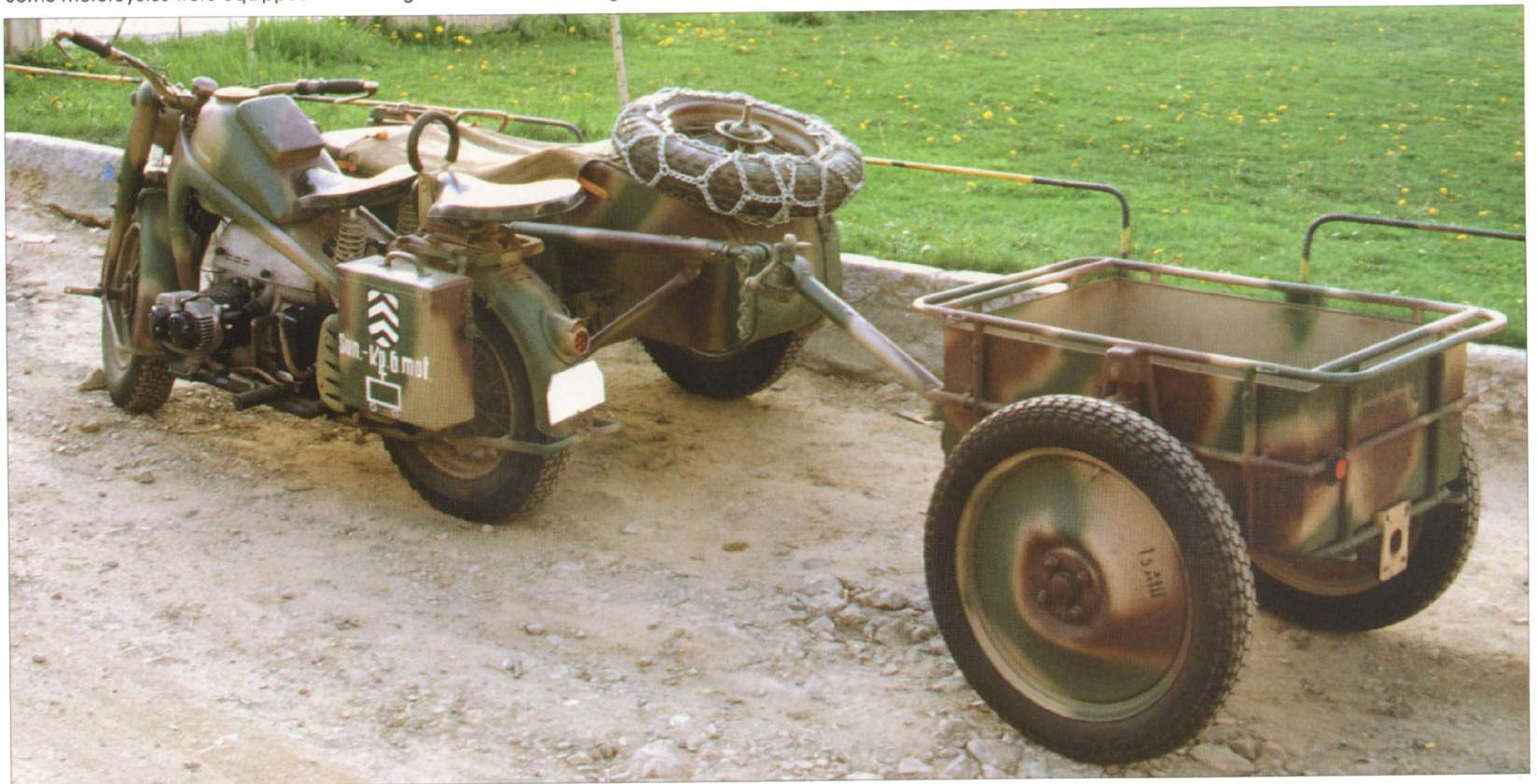
Sidecar Details



Trailer Details



Some motorcycles were equipped with towing device used for towing a Trailer. Frame of the sidecar BW 43 on opposite side shows BMW R 75 type.

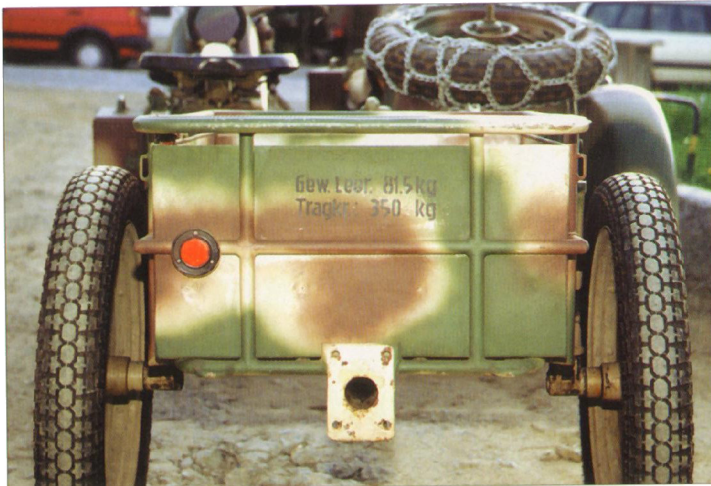




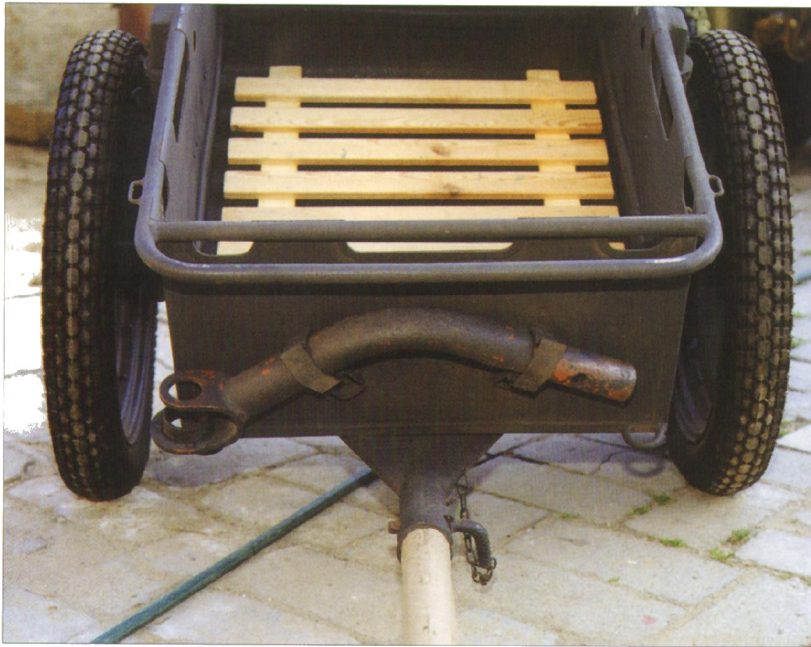
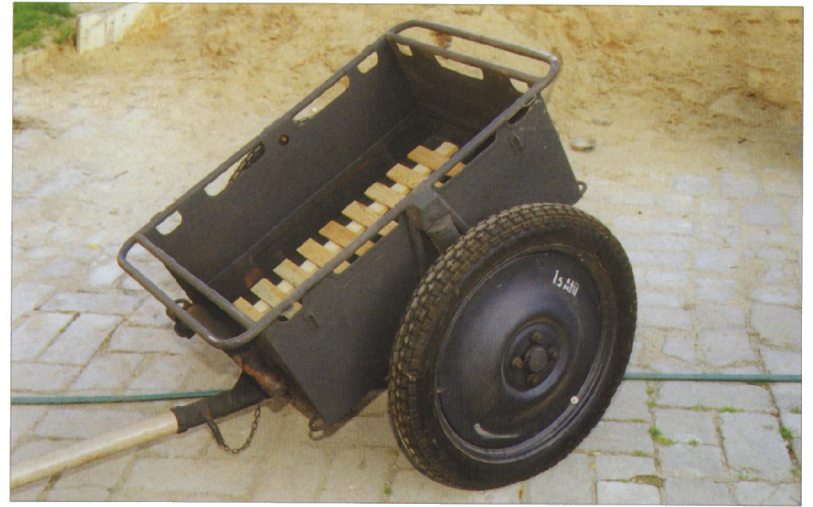
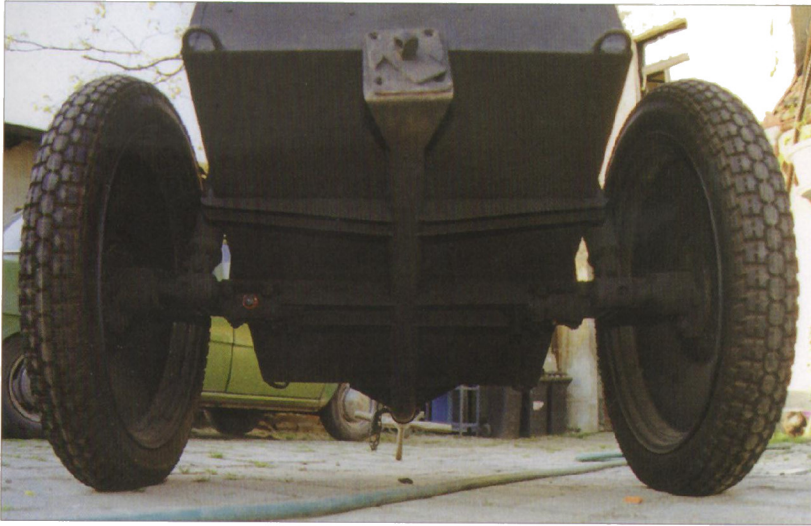


Various manufacturers used different running wheels either with holes or full pressed metal. Trailers were canvas covered.

Trailers Details



Trailers Details



Trailers used to have wooden floors as shown on photos on this page.
Payload of trailer was 350 Kg.
Depending on towing device connection of several trailers behind each other was possible.

On May 7th 2000 in Prague - Nusle.



Reconstruction of events from Prague's uprising in May 1945 under the name "Barricade 1945" took place. Apart from various military vehicles several well preserved motorcycles Zundapp KS 750 and BMW R75 participated in this event.



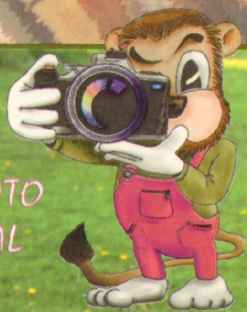




Both photos show a trailer being towed behind a BMW motorcycle R 75.



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