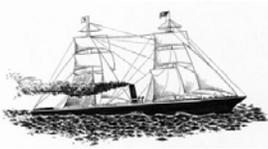


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**Friends of the Rozmberk Society Inc Iowa, USA
Rozmberk Society p.b.c. Kojakovice, CR**

M39 Dump truck to tractor conversion for dummies

Finally found some time to put everything on paper. To make finding it back and copying it, here the technical steps and problems. I work in Europe, so all sizes are metric. It was a bit of luck that the larger metric size tools were near-enough identical to the US sizes used original.

Warning

These bolts and nuts have been in place for decades. They might need immense power to loosen, or just smoothly come free or break. Mostly, the latter two options happen after applying the first. This is a good moment and place to get your fingers between wrench and steel with too much power behind it!

The best way is to put the wrenches on and then, very slowly and carefully, without blocking the second wrench, turn the first one taking the other wrench with it until the second one hits and closes up on solid steel from the frames. Then just keep it in place from the side and let the steel do the blocking. However, still be careful for wrenches slipping or braking, which might over-balance you.

While working, tick off especially the points under step three. Believe it or not, during this process I several times had to stop and to do one of these steps because I had not realized that step had to be done.

What you need to remove the dump bed

1. Spray can of WD 40 and a steel brush
2. Two bolt and nuts M10 or M12, 8.8 high-grade steel. You need these to bolt the dump bed to its sub-frame
3. Wrenches sizes 24, 26, and 29. Get two of each. I particularly like the combination-type that has the open-end on one end and the ring of the same size on the other end.
4. Socket wrenches 24, 26, 29, preferable air-powered.
5. Several heavy timbers about 15" or more thick to support the dump bed when you lower it onto the ground. You need enough thickness to protect the hydraulic pump, which sticks out about 10" below the sub-frame.
6. A box to put in all your bolts, nuts, springs, rings, and whatever you took off and out. I will not repeat this at every step, but save all stuff in one place.
7. Almost forgot: somebody with a telescopic handler or crane able to manipulate at least 6,000 lbs at its tip.



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Step one: 1-2 days BEFORE starting the real work.

8. Clean all bolts, nuts, and other places you have to work on with the steel brush and soak them in WD-40. Do this several times at least a day before you start work; the stuff needs time to work.

Step two: make sure you have enough time and a good mood before you start.

Step three: the little things are easy to forget (with disastrous results)

9. Bolt the dump bed to the sub-frame. At the front of the bed and sub-frame is a place where to bolt the bed to the sub-frame. Use the biggest size bolt the wholes will accept. Just hand-fast is enough.
10. Make sure the dump bed manipulation lever is in neutral.
11. Disconnect the rods that run between the manipulation lever and the hydraulic pump. The best is to do this as close as possible to the pump. Tie the levers to the frame so they cannot be bended or damaged while manipulating the dump bed.
12. Disconnect the pump from the drive shaft. You can probably manage with everything in place. Did not work with us (our stupidity) so we just moved the bed backwards until the shaft glided out of the joint.
13. Tie the shaft with some rope or belt to the frame.
14. Disconnect the rear lights. They are connected to the sub-frame. This can be done with the bed raised, but as easy later from below without problem (I don't like working under a raised bed).

Step four: freeing the sub-frame with the bed in one go.

All is described when standing next to the truck looking at it. So "at the back" means at the backside of the left or right flange of the frame, NOT at the outer end when looking from behind.

On the front part of the frames, on each side the sub-frame and main-frame are bolted together with two bolts-nuts with 4" spring coils in between. Bit frustrating to work on without airpower, but doable. The 26 and 29 wrenches are needed here.

15. Remove the split pin out of the lower bolt. Mine was rusted into the bolt, so I just put a bit more power on the nut and got it off like that. Later, on a workbench I took the rests of the pin out.
16. Free the bolts and nuts.
17. At the back of the frames, the sub-frame fits over the outside of the mainframe with a sheet of steel, through which also fits the hinge for the bed. Here, four bolts size 24 are connecting subframe to mainframe. The nuts are inside the strengthening triangles for the pintle hook. With a bit of wriggling you can get a wrench on the nuts from below. Fix the nut-wrench against the frame and then start using power and loosen from the bolt side.
18. Take all bolts and nuts out and save them in your box.

DO NOT DO THIS WITH THE DUMP BED RAISED BECAUSE IT SEEMS EASIER.



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Step five: and now for the fun.

All the above can be done without help, but now you need some serious help, at least three people and a telescopic handler or crane.

19. Connect four chains or heavy belts to the corners of the dump-bed
20. Raise the dump-bed unit **SLOWLY** an inch or so to get it loose from the main-frame
21. Check if all is really free, especially the connections to the hydraulic pump.
22. If not, lower the bed again and get it free. Do **NOT** work under the unit while it is hanging in the chains.
23. If all is ok, raise the bed slowly. One person should keep an eye on the hydraulic pump at all times; you do not want to damage this because the crane shifts a bit or so.
24. Use 4x4 or other timber to help maneuver the bed free, do not use your hands, fingers are too precious (I know; I smashed the top of my left index finger while closing a car door three weeks ago. Still typing half-handed).
25. Lower the unit on the floor and make sure you have enough timber to keep the pump off the ground.
26. Take of the wooden spacer plank that was between the sub-frame and mainframe. It has holes in it to allow for the rivets in the mainframe

That is part one done. Time for [one more cup of coffee for the road](#). I learned later that this song is originally from Dylan (a.k.a. Valley Below), this is the Czech cover version and one of my favorites).

Once you have seen the bottle-necks, the actual work does not take long, a few hours at most.

Creating an M52: adding the fifth wheel

What you need

27. A fifth wheel unit. I got a road-certified Jost 5th wheel with spacer plate as one unit. This will bring the top of the fifth wheel in line with the average height of trailers in Europe.
28. High-grade bolts and nuts to fix the 5th wheel to the frame.
29. You need to, as they say, rent, borrow, or steal a professional magnetic drill. I would not try doing it any other way; it is worth the investment in time and safety.
30. Buy high-grade drilling oil. Experts working with magnetic drills recommended me to buy this special oil where you only need a few drops. Set me back about \$ 10 for the little bottle; I had oil left after we were finished. Do not use these watery-oil solutions; you need lots of it, it makes a mess, and is less efficient.
31. Buy a suitable and high quality cutter bit. I. It has to go through strong and thick steel with a lot of power behind it, so do not try to save money here.



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Step 6: measuring: how to fix the 5th wheel.

Take your time for this one!!!

There are two options:

- I) Bolt side-rails to the main frame and then mount the unit onto the side rails.
- b) Mount the unit directly onto the frame.

Option I.

This is quite common in commercial vehicles in Europe. The side rail is stitched with rivets to the main frame. The rail has numerous wholes on the top side, so the 5th wheel can be moved easily forward or backward. More advanced 5th wheels actually are mounted on a slider and can be put forward or backward within minutes. The unit I bought (see picture) actually was mounted on a side rail system.

However, getting a suitable side rail and connecting it to the main frame is a pain as well. You have to go around existing structures without weakening your rail or the main frame. No easy job.

Option II: what I did

If the authorities agree (ask BEFORE you start), this one is the easier option. The main reason to go this way is that you drill fewer holes. You have to be secure in measuring and figuring out how to fit the unit. The main problem is the rivets fixing the crossbeams inside the main frame. I was lucky; for spacer plates, the Europeans often use so-called sheet piling profiles (would be nice to know the correct word for that). The waves of the spacer plate on my 5th wheel fitted perfect around the rivets on the main frame of the M51. I used a wooden plank as first check to measure if it would work. We fixed the spacer plate onto the main frame and drilled the holes trough plate and frame in one go. This way you are sure all the holes line up correctly and it is quicker.

32. If connected, disconnect the spacer plate from the actual 5th wheel assembly.
33. Measure how and where the unit will and can be connected to the main frame.
34. Fix the spacer plate onto the main frame with bar clamps and make sure it is centered correctly.

Step seven: drill baby drill:

You have to drill at least 8, max 12 holes. We used 10, five on each side; according the DoT that would give enough strength. We are talking 18 mm holes through 23 mm of steel in one go. That was a sandwich of 8 mm spacer plate for fifth wheel then 8 mm frame than 7 mm frame strengthening beam. We did break one drill when the electricity fell out. Barring that, the drilling went without problem. Once we had the routine, we did one hole in 10 minutes.

35. Make sure that you have good clean flat surfaces to position the drill on. If not flat, fill up or flatten with a sheet of steel, the magnet will just connect that sheet to the truck as well (adding an extra clamp is better).



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36. Line up the magnetic drill so that it is horizontally above the drilling site and switch on power and then the magnet.
37. CHECK IF THE MAGNET HOLDS AND SECURE THE MACHINE, even on a flat horizontal surface. One fluctuation in the electricity and your magnet is off but your drill continues and smashes everything around it.
38. Put a bit of cutting oil on the surface
39. Start drilling but DO NOT put a lot of pressure on the drill. Gravity and a bit of lean is enough, it will just eat through it. Actually, you can push the thing down with one finger, and just drink a cup of coffee at the same time.
40. Every now and then, remove the steel thread coming off and add a bit of oil.
41. After each layer of steel perforated, we had to stop and remove the drilled out material from the middle of the hollow drill. Without doing that, the drill just did not get grip on the next layer.

Step eight: connecting the unit onto the main frame

42. We first bolted the spacer plate onto the frame.
43. Nasty surprise. One of the bolts in the middle ended up within the box formed by the strengthening beam construction. Hard to reach from anywhere, took us a lot of time and problems getting the nut on and tight.
44. Bolt the fifth wheel onto the spacer plate.

That's it. Piece of cake (phew). One we had the holes and knew the routine we managed to get the 5th wheel on and off in about 30 minutes. I did manage to get the unit off and forward on a pallet on the frame, but I would advise against trying that. Getting it really off the truck you need a lot of hand power or some kind of handler.

We took the 5th wheel off again and put the dump bed back. No sweat.

The truck is now awaiting transport to the Czech Republic for further restoration. It will become an active part of our museum exhibition on the Cold War and the role of the US Army Engineers in rebuilding Europe after WW II and their ongoing role in Europe.

We still need funds to complete the restoration of the truck and the other parts of the exhibition. Please help us achieve our goal with a [donation](#).

More information about our museum activities can be found on our website:

www.CzechEmigrationMuseum.com

Cold War Exhibition

www.czechemigrationmuseum.com/Cold-War-US-Army-Engineers-in-Europe

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