DIY Motorcycle-to-Pickup Loading Ramp

By Kent Hartland

Fig 1. Unloading the bike. Notice the orange ratchet strap holding the ramp tight to the tail gate. Also, the rear wheels of the truck are in a shallow swale and the truck is facing slightly uphill for a little gravity assist in unloading.

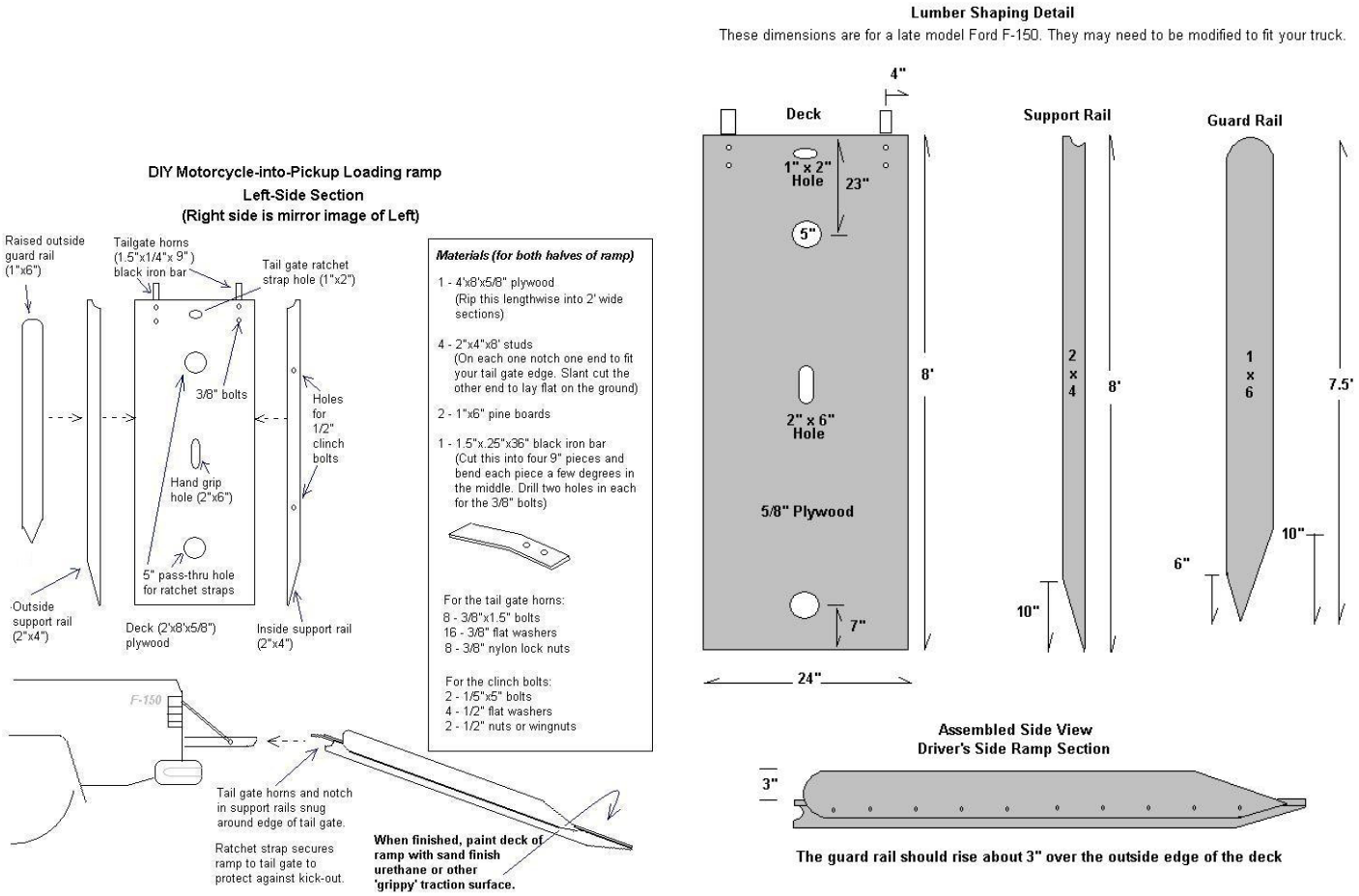
This is a simple, inexpensive and strong loading ramp to get a full-size bike into a full-size pickup truck. It is made so that one man can set it up, load the bike, stow the ramp in the truck and then reverse the process when you reach your destination. It cost me less than $50 for all the material and hardware to make it.

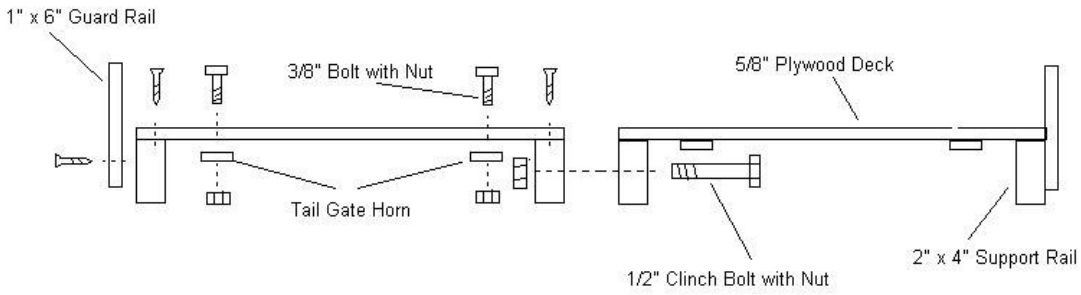
This particular design was cut for a 2001 Ford F-150 but should be able to be modified as needed for your truck. Probably the only thing that would change much would be the pass-thru holes for the tie-down straps. These 5” holes are positioned for the tie-down anchor points on the F-150 which are near the four corners of the bed, down close to the level of the bed floor. They allow your ratchet straps to pass thru the ramp sections while the ramps are stowed in the truck alongside the bike. They also ensure that the ramp sections can’t be removed until the motorcycle is unstrapped for unloading.

Fig 2. Bike is loaded and ready to transport. Notice the tie-down straps passing thru the holes in the disassembled ramp sections along side the bike. The straps attach to anchor points on the truck bed behind the ramp sections.

If your anchor points are higher or different you might have to place the pass-thru holes differently or you might not need them at all.

Another decision you might want to consider is whether your ramp needs to be four feet wide. You could narrow it down to a 40” (two 20” sections), still have plenty of ramp space and have a lighter ramp. If you made a narrower ramp, it’s conceivable you could also use thinner plywood, like one-half inch, since your four 2”x4” support rails would be closer together. That would save more weight and make the ramp even easier to handle.





The ramp is made in two pieces roughly 2’ wide by 8’ long bolted together for a 4’ x 8’ ramp. Making the ramp in two pieces allows it to be taken apart and stowed in the truck bed along side the motorcycle to be used again when you reach your unloading destination.

I elected to use untreated white pine lumber since it is lighter in weight than treated lumber, but that’s up to you. I also have established that the 5/8” thick plywood is plenty strong, especially since the weight of the motorcycle is in the center of the ramp where two 2’x4’ studs are bolted together. The ramp does not dip or wiggle at all when loading or unloading my V-Star 1100 cruiser. Thicker plywood would add more weight, so don’t go nuts with it.

Glue and screw everything. I used construction adhesive (aka Liquid Nails) and 1.5” and 2” deck screws.

You definitely want to apply a non-skid surface to the ramp. I painted the ramps with one coat of urethane garage floor paint and, while the paint was still wet, sprinkled sand (just regular sand like you would use for a child’s sandbox) over the wet paint. After it dried, I swept off the excess sand and applied another coat of urethane over it. The resulting sand-finish surface is just about perfect

with plenty of grip even when wet. The first time I loaded and unloaded with my new ramp was in a driving rain – another story – and the tires didn't slip at all.

RAMP ASSEMBLY/DISASSEMBLY TIPS

Flip both halves of the ramp upside down with the inside long edges facing each other. These are the 2"x4" support rails with the two ½" holes in them. You may want to prop the ramp sections level with a 4" (or two 2") piece of wood underneath so the clinch holes line up nice.

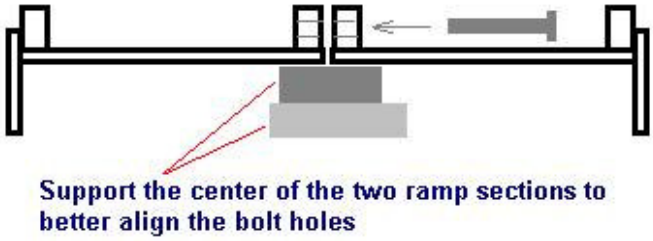


Fig. 3 I have flipped the ramp sections over to install (or remove) the two clinch bolts that hold the two sections together. You can't see it here but there is a 4" thick piece of scrap lumber under the center of the ramp to keep the sections level while I align the bolt holes. (The guard rails along the outside edge of the ramp make the outside of the sections taller when the ramp is inverted like this, thus the scrap lumber block).

When you have the two ramp sections bolted tightly together, flip the assembled ramp onto its long edge with the tail gate horns facing the tail gate. Snag one tail gate horn onto the edge of the tail gate then go around to the other side of the ramp and position the ramp so the other tail gate horns are resting on the tail gate. Pull the ramp snug up against the edge of the tail gate. Of course, this part of the job is easier with a helper but also easily done by one man.

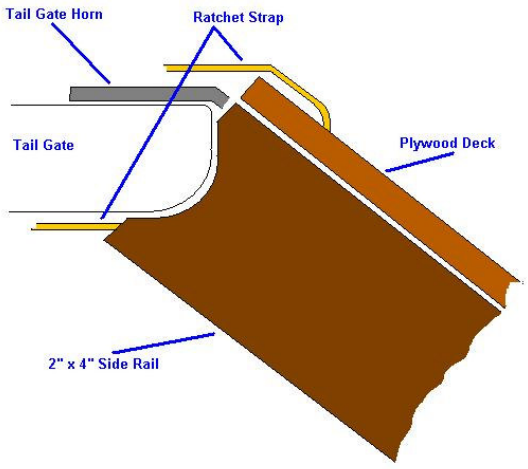


Fig. 4 The ramp is assembled and secured to the tail gate. You can see the 5" tie down strap pass-thru holes, the hand grip slot in the center of each section and (barely) the ratchet strap slots that the orange strap is passing through to secure the ramp to the tail gate.

Fig 4a. Detail of ramp attachment to tail gate edge, as seen from side.

Secure the ramp to the tail gate with one or two ratchet straps. The ratchet strap should wrap around the tail gate passing through the gap between the tail gate and truck bed and also passing through the 1" x 2" hole in the ramp section. **Don't try to load or unload your bike without securing the ramp to the tail gate with a ratchet strap.**

LOADING AND UNLOADING TIPS

First, always set your truck brakes and **chock your wheels**.

It makes a big difference to find a good spot to do your load or unload. Park with the rear wheels of the truck slightly lower than the front wheels (like in a shallow ditch). This levels the plane between the ramp and the truck bed. Also, when you are loading, try to find a spot that is slightly downhill so you can ease the bike into the bed. True, you can do it from a flat parking lot but you will have to give it a little more gas to run the bike up the ramp and there will be more of a hump at the point where the ramp attaches to the tailgate. A few inches of elevation can make a big difference in your ease of loading/unloading.

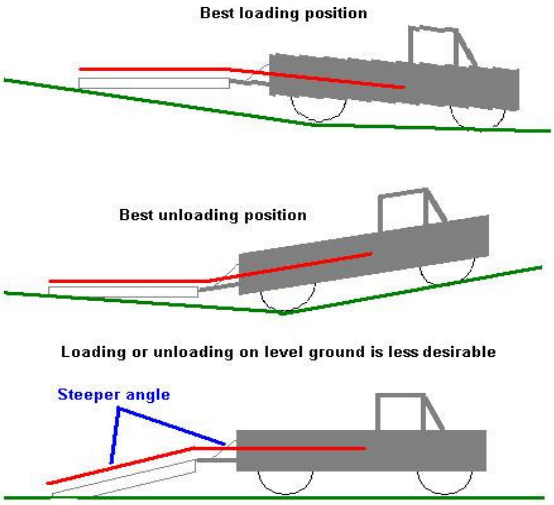


Fig 5. Here you get a better look at the 1" x 6" guard rails that remove some anxiety about sliding off the edge. Actually, with the sand-finish paint the tires gripped well and never slipped or spun, even when I loaded the bike in a driving rain (no, I didn't stop to take pictures of that fiasco).

When unloading, still try to have your rear wheels lower than the front (for a more flat ramp-to-truck bed plane) but try to have the front of the truck parked slightly uphill. This lets you ease the bike backwards by the force of gravity so you're not pulling it with your legs. If you do it right, you can ease the bike in (downhill) and ease the bike out (uphill).

It's important to understand that when you back the bike out and down the ramp, using your rear brake is essentially out of the question (you need both legs to stabilize the bike) and your front brake is pretty worthless since most of the weight will be on the rear of the bike. What you do to control your descent is to use keep the bike in 1st gear and use your clutch as a "rear brake" to slow it. Actually, I use both the clutch and front brake.

Take it slow and easy, you don't want 700 lbs of motorcycle getting jiggy somewhere above ground level.

WITH THE BIKE IN THE TRUCK

After you have loaded the motorcycle in the truck bed, disassemble the ramp (just takes a couple minutes) and slide the two ramp sections into the truck bed alongside the bike with the tail gate horns pointing toward the rear so they don't scratch up your truck.

Some guys like to compress the bike's suspension (by sitting on it) then tie the bike down hard with ratchet straps. Others like to let the bike suspension work freely by tying the bike down at the swingarm and lower front fork, for a better ride in the truck. For me, I pull the bike in against the front end of the bed then secure it with two straps through the wheels and/or lower suspension. This keeps the bike pulled forward and down, secure in the truck.

I then use two more ratchet straps wrapped around the steering head part of the frame to keep the bike straight upright. When I'm finished, the bike is upright with the front wheel pointed straight and the kickstand down (juuuust in case you get hasty unstrapping it, it won't fall over, hopefully.)

Fig 6. Almost locked and loaded. In this picture I still need to adjust the straps to straighten the bike up but otherwise, the ramp sections are stowed and we are ready to go. The tail gate stays down. We also carried two coolers and all our camping gear back there.

Pay attention to where your bike's rear wheel comes to rest when its all loaded in the truck. On my truck, my bike's rear wheel sets just at the back edge of the bed floor, not on the tailgate. If your bike rests on the tail gate, you might want to consider either first putting a sheet of plywood in the bed, extending out to the end of the tail gate, or bolstering the tail gate so that the weight of the motorcycle does not overload the ability of your tail gate retainer cables. You don't want the tailgate to drop out from under the rear wheel when you hit that first big dip in the road.

Make sure that when you are finished and ready to go the weight of the bike is properly carried by the truck bed and not the tail gate.

In summary, this worked out well. It cost less than $50, took an afternoon to build, is fairly lightweight, sturdy and can be easily handled by one ordinary sized man. Loading and unloading the bike is also a one man job, especially if you take my advice about positioning the truck for the proper nose-up or nose-down attitude.

I'm sure this can be improved on and certainly customized to your particular truck. It could probably also be used on a trailer and/or for loading furniture, appliances, etc. Good luck, I hope it serves you well.