

# Homemade Dog Cart Ideas and Plans

Contributed by Administrator  
Sunday, 04 March 2007  
Last Updated Friday, 18 April 2008

Homemade do it yourself wheels for a dog or cat or other pet

A dog cart, or wheelchair for pets can offer a handicapped dog or cat years of joy and freedom. Professionally made dog carts are a significant investment, often costing \$300.00 - \$500.00. Many of us choose to build our own. This section of our website is devoted to ideas, plans, and experiences around home made carts.

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Check out our classifieds sections to buy and sell used carts or our message board to discuss carts.

Message board discussion about a homemade wheelchair for a cat

Turn a Person's wheelchair into a dog cart for a large breed dog.

Posted by Dennis D

For large pets and small pets, check this out.

For large pets:

I just got back from a large hardware store (Home Depot) where I examined alot of fittings and connectors (for connecting frame components of carts in various materials from electrical conduit, plastics, 1/2 inch copper water pipe or a mixture of these.

The best I think is the 1/2 inch copper water pipe, BECAUSE, there is such a wide assortment of connectors and fittings, moreso than in plastics or electric conduit, and they are easily and quickly assembled and soldered with a small hand held propane torch. They are also inexpensive First I looked at electrical conduit connectors. These are interesting, but limited in terms of versatility. Plastic fittings are also more limited than copper, as well as being more bulky (Copper is stronger for it's size).

Thick wall copper could be used for very large dogs and thin wall could be used for medium dogs up to say 45 lbs. or maybe as high as 75 lbs. I think that there is 3/8 copper and even smaller, as I saw connectors for it, so one could combine different sizes depending upon strength requirement

If I had it to do over again I would use copper waterline and connectors to assemble a quick cart. Reason being it would be a fast and simple way to do it. I MAY just convert to copper tomorrow if my hodge-podge of materials doesn't work out tonight. (I am using grey plastic garden hose connectors ('T's and 90 deg. connectors which I will epoxy into the inside of the aluminum tubing back-pack frame I have.

Incidentally I found a particular human back brace (part padded with rigid supports sewn in and part elastic) with straps and buckles that I put on my black Lab tonight as he is down and in some pain. It seemed to fit perfectly and I used this as full body lifting harness and it works better than anything I have yet tried! I was able to support him well and he was moving all fours and was able to support 1/2 to 3/4 of his front weight. (I also have a regular dog harness on the front and this helped getting him up the stairs and into the house.) It tended to slide slightly toward the rear after awhile I think I will get him going again with some work.

All day today he couldn't move and has tried to bite me a few times in the past few days when trying to help him which tells me he is in some pain. [possibly from an inadequate simple rear support harness I tried to use, which worked, but when it slipped forward it wanted to pull his rear leg forward (not good) this rear harness is a VERY IMPORTANT ELEMENT because you don't want to move those hip joints wrong or in an unnatural or uncomfortable way. In my opinion this is the most important part of the cart, or for just a rear support harness.

The human back brace harness worked VERY WELL. I got in in a thrift store priced at \$1.99, but was reduced to 10 cents.

Now HERE IS THE FUN ONE!!

Little Pets! Auto mechanics, you will love this one!

Steel Brake Lines!!! They come in assorted lengths, are only approx 1/4 inch diameter (different diameters available) are quite sturdy, AND they can be bent and formed with a simple brake-line tubing bender, (not expensive) and there are connectors for them EVEN 'T's!

The Tee's are used to tee off from the brake line near the master cylinder for hydraulic trailer brake systems. That's the application where the 'T's are used.

Brake lines are flared at the ends and connected with brass flare connectors. (flairing tools are very inexpensive- many available for less than \$10.00 They even have 'repair' connectors that don't require a flares but as I recall they are a little bigger (more bulky) and probably more expensive.

If you know how; brake lines can be brazed or welded so they can be fabricated to any design. If I do it I will weld or braze most parts and only use a couple of connectors (if needed) to be able to take it apart.

Well that's my input from today. AND thank you all for being an inspiration.

These little critter carts (like kitties) would be fun to make, don't you guys think so? (might get tired of it if I had to do it day in and day out though).

Well LET"S SEE, maybe If we could draw up some plans so people could make their own at home. (?)

Thanks again,

Dennis in Seattle

It's John's 2 wheeled cart. This cart has been specifically designed for mid-back injuries. It creates a better weight distribution than any commercial cart I have seen. It is not limited to the mid-back injured dog.

The upright, or wheel mounting is moved forward, 2 inches more than other carts. The saddle rings have been moved back in the cart.

A rear bar, and small stationary wheel has been added to make extra stability.

(This aids when John is backing up, over the speed limit.)

While moving forward, the rear wheel clears the ground by about 5 inches.

With the wheels forward, there is more weight added to the rear of the cart. This makes the dogs own weight, act as a counter balance.

The belly strap is not just for looks.

The increased rear weight makes a lift on the cart arms, thereby making a firm lift on the belly strap.

This also, decreases the shoulder down pressure.

Everyone with a cart, thinks about the shoulder weight.

The cart is harder to flip over, because the wheels are almost centered, and more inclined to pivot, instead of flipping.

Everything that went into this design, is based on John's size, and weight.

The same type cart can be made with light weight materials. The measurements would have to be cut down for the smaller dog. John's height was our starting point.

The harness is much the same as other carts use, except John has a belly strap, directly under his injury.

I don't want to be too vague, on the description of the cart, so if you have any questions, I will be glad to keep talking.

Kid John

Picture of Kid John in his cart

From [www.living-with-dogs.com](http://www.living-with-dogs.com) How to make a handmade wheelchair

#### Material

- 10 slim aluminum pipes. You can get them at Do-it-yourself shop.
- 2 casters which move in front and behind, right and left for the front legs.
- Normal casters for the rear legs, and stomach supporter.
- Cloth (strong nylon made cloth)
- Several plastic joints to fix aluminum pips

Frame image for a dog which legs are disabled. Legs are folded and rump is put on the crossbeam.

Frame image for a dog which legs are disabled. Legs are folded and rump is put on the crossbeam.

### How to make the homemade cart

Cut the pips into certain length according to the dog's height and length. Put them together and make a quadrilateral railing, then fix a pipe to each crossbeam for strength.

Sew up the cloth on the railing, allowing certain room according to the dog's size. Make holes for the dog's legs and sew up another cloth around the holes to strengthen.

Make the height of the wheelchair same as dog's legs reach the floor. Imagine walker for babies and hospitals. It seems good for dogs either front legs or rear legs are disabled that there's no burden on another legs.

As for the caster, helper wheel for children's bike seems good. The cloth where the body lays needs certain room and it would be easy to put on and take off for laundry if you use button, just like attaching stretcher to the pipe. The shape looks like child walker.

It does not have a small turning circle, but it is good enough to go for a walk.

(25 Nov 2000)(Aichi-pref, Ms N.C)

Here is a picture of Mimosa.

Here she is in her physical therapy cart. It wouldn't be ideal for long term use, because the vet wrap isn't secure enough. However, it works great for 15 minute physical therapy sessions to build up her front leg strength. It also allows her to use her one good leg.

### Speedy Kitten's Cart

<http://geocities.com/speedykitten/index.html>

Homemade cart links

<http://home.att.net/~f.abernathy/swivel/>

<http://web.tiscali.it/strays/triciclo.html>

Ozo's cart - See Ozo's gallery page for photos and a more complete description

My best buddy Ozo(10 years old) has degenerative Myelopathy, and hasn't been able to walk unassisted since February of this year. It took him almost a year to get that way from the first time we saw he was having problems walking in smooth surfaces. We have done about everything we can for him medically.

The difference here is that I saw a news program several years ago about people building wheelchairs for dogs. It stuck in my mind and when Ozo got to the point of not walking by himself, I looked into one. I found (like you) that the \$400+ price tag was more than I could now afford. I talked with several friends about helping out with the cost (actually they tried to convince me) and was about to do it, when the thought came to me to try and build one myself.

I looked at every photo I could find of any kind of dog cart. I found things I liked, and things I didn't and designed one that I thought I could make. I could write pages about this process as it was quite an ordeal to get to the point where I actually got one I liked.

Ozo has been using his cart daily, and he hasn't missed a single walk since February. You should see his face when he goes out.....what a smile! We go out for an hour a day, seven days a week.....and have logged over 400 miles in that time! In the beginning, he could still use his rear legs with the support of the cart.

Then it became necessary to make him boots to keep his feet safe from him dragging them. About a month ago, I finally had to attach straps to hold his feet off the ground because he just couldn't get them to step a full step anymore.

It was very hard to do because it showed me how this disease was progressing, and the muscles weren't going to get the use. To my surprise.....he actually goes faster now, and ventures off places he wouldn't before. He still kicks his legs in the straps as he walks, so he is still getting some exercise as he walks.

Sorry this post turned out so long, but it feels good to share this info with someone in a similar situation. I would also like to make a few suggestions about the cart you are having

built.

Make sure there is plenty of padding in the places where the cart contacts the body. I bought the closed cell foam insulation that you put around water pipes to keep them from freezing. It is very inexpensive, and has a split in the side so it is easy to install.

After some experimenting, I put several layers where the cart contacts the neck, then wrapped it with electrical tape to keep it in place.

Next, really put some thought into the saddle where your dog will sit. You need to make sure it is cut away enough so he can do his business (front, and back). It also has to be soft, and or padded. I first used neoprene (from a wet suit that the local dive shop donated when he heard what I was attempting). It worked well, but you have to watch the front of the saddle as it has the most chance of rubbing and causing irritation. My wife finally made up this figure eight sort of a saddle that is very padded and soft.

I found that the height of the saddle is very important, as Ozo would refuse to walk unless I had it just right, not too high, not too low. In fact be prepared for your dog to possibly not like the cart for the first few days. Ozo would lay his ears back and look upset at first. I had to lead him with a leash at first, but after about three days (make it as fun as possible, lots of good boys!!) he figures out that this was his "walkin' machine".

Another thing.....I would highly recommend large wheels. I used 16 inch rear wheels from an old lawn mower at first, but they are hard and heavy. I next used 16 inch wheels from a baby

jogging stroller. They are lighter, and since they have air in them, I think a softer ride. Smaller wheels just aren't stable enough for a large dog.

One last thing that I can think of.....the balance point of the cart is also important. If his saddle is directly over the center of the wheels the balance is pretty good. The further forward you put the saddle, the more the cart will press on his shoulder area, too far back, and the cart will want to tip over backwards. I settled on having the saddle several inches in front of the center of the wheels. That way the cart doesn't want to go over backwards, and there is just enough weight on his shoulders to keep the cart from wiggling around too much, but not so much as to be uncomfortable.

You will probably have to have some sort of strap to keep the cart from moving around on his neck. One final thought and I'll close. I had the illusion (and many people I meet do) that I could build this cart and let my dog go and be a dog all by himself. I would highly recommend that he is supervised while in the cart, because.....they can tip over when the dog gets too

excited, or finds a ditch to go into, a small bush to drive over, etc.

I hope this of some help to you or anyone else that is in a similar situation out there. If I can answer an of your questions while the cart is being made, or when you do the first fitting, please let me know. Take care.....best of luck,

Randy

## A Homemade cart for Scooter

## Raks the German Shepherd and his Wheelchair

- by Richard Bergins

### Initial Contact

In July 2004 I contacted a woman named Svetlana regarding an ad I saw about her needing a cart for their disabled male German Shepherd on HandicappedPets.com. She told me her dog named Raks was 10 years old and was diagnosed some months ago with six age-related degenerated discs in his mid-back. She currently was walking him with the help of a lifting harness she made herself out of a dog seatbelt. She noted Raks weighed 105 lbs. with much energy and strength, so the combination of Svetlana holding Raks' walking sling with one arm and trying to control him with the other arm was quite exhausting and probably not good on her back!

### Raks before his cart

She lived only 30 miles away so we were able to set up a meeting and measuring session. Upon taking my eight or so measurements, Svetlana and I spoke about Raks' diagnosis, his activity level, the environment they take their walks, bladder and bowel control.

Armed with my measurements, some photos, and agreed upon requirements, I was ready to build! Of course I first had to design a cart to fit this large dog, based on my previous cart designs.

### Design

I like to work in AutoCAD, which is a CAD program allowing me to draw everything to scale and easily make changes on the computer. CAD stands for Computer-Aided Design. I have my own licensed "light" version of AutoCAD.

Utilizing this program I am able to get a tracing of the dog into my drawing, and then build a cart to fit him. I of course allow for some adjustment because projects rarely fit perfectly without some fine-tuning.

My design utilizes square aluminum tubing and polycarbonate plastic plate for the main frame. I chose the larger diameter wheels because Raks is a big dog and he also goes over terrain with bumps and obstacles sometimes. The larger diameter wheels roll over obstacles better and have some shock absorption with their pneumatic (air-filled) tires.

I use nylon webbing strap material to form a saddle, which is looped through slots in the cart's side plates up top, and heavily padded with rubber tube covered with thick foam padding. I use buckles to allow for strap adjustment.

My new design has a cover over the padding to allow for washing and less slippage of padding on the straps.

The saddle is one of the most challenging parts of the cart for me. Like the seating system on a person's wheelchair, it is the crucial part that comes into contact with the body and holds the dog in what should be an ideal position. As with human wheelchairs, incorrect positioning can lead to possible injury and worsening of the current condition. That's the last thing one wants to do while trying to help a dog!

Sometimes an ill fitting cart or saddle will just be uncomfortable for the dog, resulting in disuse of the cart. I like to rely on the owner, along with my observation, as to whether the dog seems comfortable and natural in the cart. They can see the subtle signs and they know their dog better than I do.

After much cutting, drilling and running back and forth to Home Depot a few times, the cart was ready for Raks to try it out!

Finished Cart- Shown Without Dog

First Trial

Svetlana was nice enough to come to my house with Raks and her young daughter, who kept herself entertained watching my turtles and wandering around the garden, it being a nice summer day. Two major obstacles were readily apparent and would need modifications before delivery of the cart:

Raks was tipping the cart over sideways as he sped around turns, despite my thinking it was wide and stable enough! There was not enough clearance to allow Raks full range of motion for his rear legs, as his legs hit a frame cross-piece on the rearward phase of his leg swing.

To address these issues, I installed longer axles making for a wider "base." I also angled the axles ever so slightly, so as to tilt the wheels inward, referred to as camber. You'll see many cart makers that do this, and wheelchairs for people too. It allows one to provide a wider base without going to extremes on axle length or widening the frame.

To address Item 2, I simply moved the rear cross-pieces upward. The frame seemed to maintain its stiffness while allowing lots of free space underneath for his leg swing.

## Second Trial

Once again, my ever-so-patient client, dog and daughter made the half-hour trip down to the house on another nice sunny day, all of us hoping Raks would be walking in his cart soon.

Svetlana brought Raks out of the car, him pulling and barking, all excited and full of energy as usual! The cart was positioned just behind him, while his legs were lifted into and through the saddle until his thighs were held snug, but not too tight. The front straps were looped around his chest and just behind his neck, and he was ready to go. We headed for the lake just a block away, which has a smooth dirt trail around it. Raks was walking, then he was running, then he was chasing garbage and sniffing everything and pulling, just like his usual self, according to his owner!

I took my camera and enjoyed the most satisfying part of building dog carts; seeing a dog walk and play again! Raks came back with us and he was worn out, just wanted to lie down and drink his water. It must have been like an athlete who hasn't run in months; the mind is willing but the body needs time to adjust.

Raks trying out his new cart!

## Fine Tuning

We noticed a little too much weight being put on Raks' front legs and collar strap. Moving the position of the rear wheels forward to get more weight onto the cart did the trick. This adjustment was simple, as I include several mounting holes in the frame.

Raks was also tough on the nylon clasps that hold the straps that secure him in the cart. He was pulling them out no matter how hard we tried to fasten them! I ordered steel ones with a much better grip and switched out the plastic ones.

## Concluding Notes

Raks is still using his carts for his walks. His health seems to have improved in the several months since I saw him last. This could be due to some changes in medications he has had, his owner trying some natural non-prescription remedies with him. I would hope his health was also enhanced by his being able to take longer walks and getting regular exercise.

I have since provided Raks' chair with axles that allow removal of the wheels for easier transport in their car. Svetlana works with me and provides great suggestions and feedback on improving this design.

It's satisfying to combine my work experience in manufacturing and design and my education (Mechanical and Biomedical Engineering) and apply it to my love of animals. Although the financial payback right now is minimal, it's great to hear from an owner, "Thanks for helping Raks walk again." Some things need not be measured in dollars!

Contact Rich if you would like him to build a (low-cost) cart for your pet.

Email Rich

[rich@handicappedpets.com](mailto:rich@handicappedpets.com)

Rich Bergins

"Rich graduated with a BS in Mechanical Engineering Technology from Penn State University (1985), then moved to the SF Bay Area and worked in manufacturing and design for several years. He then returned to school to get his MS in Biomedical Engineering from California State University in Sacramento (1997). He currently works with assistive technology for an agency in central NJ that serves children and adults with various disabilities. In his spare time Rich has been designing dog cart-wheelchairs, combining his engineering background with his love of animals. "