PICKUP TRUCK RACKS

by *JLC* Staff

A good rack saves time and protects equipment

Unlike an office worker, a tradesman can't just grab a briefcase and head to work. He needs to bring materials and equipment with him, which is why so many construction workers drive pickup trucks. Unfortunately, even trucks with 8-foot beds aren't much good for hauling long objects like pipe, staging planks, and extension ladders. Even if the bed is big enough for the load, you risk damaging equipment and materials if you pile them on top of one another. The way to solve these problems is to get a truck rack. A rack makes it easier to load and unload your truck, so you'll spend less time handling materials and more time practicing your trade.

Steel Racks

Most racks are made from steel because it's cheap, strong, and easy to

Figure 1. The rear crossmember is the only removable part on a fully welded rack, like this one from McWelco (previous page). Bolt-together racks, like this model from Weather Guard (above), break down into relatively small pieces, so are easy to ship and can adapt to different-size trucks.

work with. If you see a rack with a lot of angle in it, it's probably homemade. Commercially produced racks are usually made from hollow tubing, which can be round, square, or rectangular in cross-section.

Welded joints. The simplest way to build a rack is to weld everything together (see Figure 1). Unfortunately, because a fully assembled rack is expensive to ship, companies that produce them tend to sell in limited geographical areas. Another problem with fully welded racks is they have to be designed to fit specific makes and models of trucks, so if you replace your truck, you'll probably have to replace your rack.

Bolted joints. Companies that sell nationally design racks to be shipped in pieces and bolted together by distributors or the tradespeople who buy them. In general, welded joints are stronger than bolted connections, but if the rack is well engineered, it doesn't really matter which method is used to assemble it.

Adrian Steel and Vanguard Industries make racks with single-piece sides that are tied together by bolt-on crossmembers. Reading and Weather Guard produce racks with two-piece bolt-together side rails that run the length of the bed and hang out over the cab, to support extra-long loads. The rails are supported by legs that rest on the bottom of the bed and connect to one another across the truck with bolt-on crossmembers. There's usually enough adjustment in a bolt-together rack for a single size to fit a number of different trucks.

Connecting to the Truck

Most racks have legs that rest on the sides of the bed, but some land on the bottom. The makers of the second type claim thick metal on the bottom of the bed provides better support than the thin metal on the sides. But a side-mounted rack can carry just as heavy a load as a bottom-mounted version as long as the angles or brackets that support the rack spread the weight over the length of the of the bed's side rails (Figure 2). Racks that fit over caps usually have smaller load ratings because they rest on individual brackets that hang off the sides of the truck. To obtain higher load ratings on side-mounted racks, some manufacturers replace individual brackets with thick angles that run the full length of the bed. Ultimately, it's the way the rack is braced and the thickness of the metal used that determines the load rating, not where it falls on the truck.

Most racks have to be bolted onto the truck, which requires drilling holes in the body. (Some builders object to

Figure 2. Vanguard's light-duty rack (right) rests on plates that hang off the sides of the bed, making it possible to remove or install the cap without removing the rack. The heavier-duty Vanguard rack (far right) spreads its loads onto two steel angles that run the length of the bed. Note the ladder and cargo stops on the front crossmember.

this because it leads to rust and reduces resale value, but most of the contractors I know run their trucks into the ground, so resale is not an issue.) A few racks are designed to fit in the stake pockets, so you can mount them without drilling holes.

Preventing Corrosion

Unless you live in a very dry climate, your steel rack is eventually going to rust. This will happen a lot sooner if you live near the coast or where roads are salted in the winter. Corrosion is usually more of an aesthetic than a structural problem, because the bed of a truck will rust away long before a rack will. Still, if you're trying to project a professional image, it doesn't help to drive around with a rusty rack.

Manufacturers use various protective coatings to stave off rust. The cheapest way to finish a rack is to paint it with enamel. A standard enamel finish can be applied over primer or straight onto bare metal. Standard paint finishes are easy to touch up, but they're brittle, so they chip and crack. For a tougher finish, some manufacturers use a two-part polyurethane paint. This costs more, but it holds up better than enamel. Powder-coating is the toughest finish of all. A dry polyester powder is sprayed onto the rack, then baked till it melts and fuses to the metal. The finished coating is exceptionally thick and flexible, so it's difficult to chip. Unfortunately, it's more expensive than paint, and only the larger manufacturers can afford the equipment needed to apply it.

In any case, no finish lasts very long if you slide material across it every day. Reading's solution is to make the crossmembers of its steel racks out of aluminum so they won't rust when the finish inevitably wears off.

Aluminum Racks

The simplest way to prevent corrosion is to make the entire rack out of aluminum. But there's another reason to use aluminum: It can be extruded into complex shapes that allow components to slip over or slide onto one another. This makes it possible to build highly adjustable racks (Figure 3). Two racks in particular are good examples.

TracRac is built around a pair of aluminum tracks that fasten on top of the truck's bed rails. Welded leg units with base plates that slip over T-shaped ribs on the tracks are held in position by lock knobs, and are thus easily adjustable and removable. The rack consists of crossmembers bolted from leg to leg. Crossbar tiedowns fit in slots on the top of crossmembers. They're held in place by lock knobs and can be moved closer together or farther apart depending on the width of the load.

The system will also accommodate cross-bed toolboxes, which you can easily slide forward and backward in the bed as necessary. An optional cargo holder attaches to ribs on the sides of the tracks and can be used in place of the tailgate or moved forward to restrain cargo. Flip the cargo holder into the vertical position and it protects the rear window of the cab. Optional tiedowns can be placed anywhere along the track, and the forward crossmember can be fitted with a cantilever rack to support loads that hang out over the cab.

TracRac looks sporty because there aren't any front-to-back rails between the uprights. You'd think this would decrease carrying capacity, but diago-

nal braces between legs and base plates stiffen the rack enough that it can carry a 1,000-pound load.

System One makes several rack systems, but the best known is their Contractor Rig, a no-nonsense aluminum rack designed for the professional tradesman. The rack is shaped like a standard steel rack in that legs support crossmembers that are connected by fore and aft rails. But the similarities end there, because System One's rack can be customized with a variety of adjustable tiedowns and cargo hooks.

A pair of extruded aluminum tracks bolt to the inside edge of the bed top rail. T-shaped grooves in the top and edge of the track capture the heads of the carriage bolts used to attach legs and accessories. The legs support beefy aluminum crossmembers, as well as side rails that run from the tailgate out over the cab. Although the legs aren't designed to move, you can support short loads by installing adjustable intermediate crossmembers. T-shaped slots in the crossmembers and legs accommodate optional tiedowns, ladder stops, and brackets for storing cords, hoses, and tool buckets. Other options include ratcheting tiedowns and a cab window guard. The Contractor Rig can also be equipped with cross-bed or side-bed toolboxes.

Load Ratings

Truck racks typically have load ratings of between 500 and 1,800 pounds, with 1,000 pounds being about average. Some companies won't tell you how much their racks can carry. It's not that they make flimsy products; they just don't want to leave themselves open to lawsuits. Some of the unrated racks I've seen look like they'd have no trouble carrying 1,500 pounds. The safety issue has as much to do with the stability of the truck as it does with the absolute strength of the rack. Putting weight on a rack raises the truck's center of gravity and can cause it to handle poorly or even roll over.

You need to use common sense when you load a rack. What's appropriate to put on a truck with dual wheels and a beefy suspension might be way too much weight for a truck with a light-duty suspension.

Loading up. The front-to-back rails on most heavy-duty racks make it impossible to load material with a forklift, so you have to load material one piece at a time. Racks without rails can be loaded with a forklift, but they don't normally have the load capacity to justify doing it. Some companies drop the side rails in relation to the crossmembers, so there's room to retract the forks after the load has been lifted onto the rack. This feature is normally reserved for high-capacity racks (those rated for 1,500- to 1,800-pound loads).

However you load the rack, don't get carried away. A 16-foot 2x12 weighs about 60 pounds, meaning that a 1,200-pound rack can safely carry 20 of them. Sheets of 3/4-inch plywood weigh about 80 pounds, so the same rack could safely handle only 15 sheets.

Securing Loads

No matter how the load is placed on the rack, you have to tie it on before you drive away. Some guys use bungee cords, but they're too weak to secure heavy objects and break just often enough to create a hazard. Rope works fine, but is easier to cinch down properly when there's something to tie off on, like the cleats and eyes that are attached to most racks. An even better way to secure a load is to tie it down with ratcheting band clamps. A number of racks are available with these clamps bolted right onto them. RackStrap makes ratcheting tiedowns that can be attached to nearly any rack.

Some racks are available with a screen or plate above the front crossmember to keep material from sliding off the rack when you brake. Other options include conduit and pipe carriers, and hooks for hanging stepladders.

Carrying Ladders

A lot of tradespeople regularly haul extension ladders. The crossmembers of most racks have or can be equipped with short vertical posts that keep ladders from sliding forward or from side to side, though you still have to tie the ladders on. An even better way to keep ladders on the truck is to equip the rack

Figure 3. Rustproof aluminum racks are made from slotted and profiled extrusions that allow for flexibility in attaching options like tiedowns and ladder holders. TracRac's uprights (top) can be easily repositioned anywhere along the aluminum extrusions fastened to the sides of the bed, as can the cargo holder in the bed.

The T-shaped grooves in the Contractor Rig's extrusions (above) allow you to customize it with a variety of tiedowns, hooks, and ladder holders (inset).

with a lever-operated hold-down that works without ropes or bungees.

Every now and then you'll see a rack with foam pipe insulation duct-taped over the crossmembers. This doesn't look so hot, but it will protect ladders and finish materials from damage. Over time, road vibration may cause unpadded crossmembers to wear into the legs of fiberglass and aluminum ladders. Believe it or not, a lot of ladders are ruined this way. A few racks come with rubber or plastic protector strips attached to their crossmembers, a nice option to look for.

Makers of Racks and Accessories

Adrian Steel
906 James St.
Adrian, MI 49221
800/677-2726
Product: Steel pickup racks
Load Rating: Model 2S and 2SF, 1,800 pounds; Model 1D, 1,000 pounds; over-camper version, 750 pounds
Construction: 2S and 2SF, 2x2-inch steel tubing, 13-gauge frame with 11-gauge crossmembers; D series, 1x2-inch 13-gauge tubing throughout.
Comments: These racks have fully welded sides that are connected by bolt-on crossmembers. They're heavily braced, and available with vertical or slanted sides. Adrian makes several models, so there's one to fit every truck. One version has dropped side rails, making it easy to load with a forklift. Accessories include an intermediate crossmember, roof and window guards, and ratcheting tiedowns.

BCI Inc.
Box 1002
Diamond Springs, CA 95619
916/621-0754
Product: Rack-It truck racks
Load Rating: Unrated
Construction: Welded steel racks made from 1 1/2-inch schedule 40 pipe and 3/16-inch-thick angle; enamel paint finish.
Comments: Rack-It makes standard over-cab, forklift loadable, and over-cap versions of their rack. Models are available to fit nearly every size of truck. Options include an intermediate cross bar, ladder holders, and a window protector.

Knaack Manufacturing Co.
420 E. Terra Cotta Ave.
Crystal Lake, IL 60014
800/456-7865
Product: Weather Guard ladder racks
Load Rating: Aluminum model 1234 carries 500 pounds; steel models 1245 and 1275 carry 1,000 pounds in standard configura-

tion, 1,500 pounds if equipped with cab protector.
Construction: Steel racks have 14-gauge legs, 11-gauge rails, and 1½-inch square 14-gauge crossmembers. Racks are held together by heavy metal clamps that bolt over or around the tubing.
Comments: Weather Guard produces the broadest line of truck accessories on the market. The racks come with a powder-coat finish and are available with add-on crossmembers and locking ladder clamps.

McWelco Products
6730 Santa Fe Ave.
Hesperia, CA 92345
800/736-0083
Product: Fully welded steel racks
Load Rating: 700 to 1,800 pounds, depending on the model
Construction: Racks for full-size trucks are made from 1¾-inch-diameter tubing; models for compact trucks are made from 1½-inch tubing. Legs on regular and forklift-loadable racks are supported by brackets that fit in the stake pockets. Camper shells land on steel plates.
Comments: McWelco makes three types of racks: regular, camper, and forklift loadable — available in three different grades — Pro-Rack, Standard Series, and Deluxe. Pro-Rack has a standard paint finish and simpler construction details than Standard or Delux racks. Standard racks are finished with polyurethane paint and Deluxe racks with powder coat or a double coating of polyurethane. McWelco racks are available with a broad range of options such as conduit bins, ladder hooks, and cab protectors.

Rack-Strap Inc.
808 Molalla Ave.
Oregon City, OR 97045
800/841-5790
Product: Rack-Strap ratcheting tiedowns
Load Rating: Each strap provides up to 500 pounds of wrap tension.
Construction: Plated steel with a synthetic fabric web.
Comments: Rack-Straps are well made and have very few moving parts. Although these straps cost more than bungees or rope, they should pay for themselves by preventing accidents and reducing the amount of time you spend securing loads.

Reading Body Works Inc.
P.O. Box 650
Shillington, PA 19607
800/458-2226
Product: Ladder Racks, PUL-5540 (midsize/compact) and PUL-6446 (for 8-foot bed)
Load Rating: Unrated
Construction: Parts of the "truss" rails are welded, everything else bolts together. Legs bolt to the bottom of the bed and are made from 14-gauge steel tubing. Rails are made from 10-gauge steel.
Comments: This rack has a powder-coat finish and aluminum crossmembers. Options include a cab guard, locking conduit carrier, and a grill to prevent materials from sliding forward during braking.

System One
P.O. Box 592
Pennington, NJ 08534
800/627-9783
Product: Contractor Rig aluminum truck rack
Load Rating: 1,200 pounds
Construction: Aluminum extrusions held together with stainless steel bolts.
Comments: It's easy to customize the Contractor Rig so it suits the way you work. You can add or move options like ratcheting tiedowns, cargo anchors, or cargo hooks.

Tailgater
1601 Moffett St.
Salinas, CA 93905
800/963-rack
Product: Versarack
Load Rating: 800 pounds uniformly distributed load
Construction: Aluminum extrusions joined by fiberglass and Kevlar-reinforced nylon hubs. Legs land on brackets that fit into the stake pockets.
Comments: Tailgater also makes a broad line of truck and van accessories. Options for the Versarack include protective plastic covers for crossmembers, a locking ladder clamp, and a kit to turn PVC drainpipe into a conduit carrier.

TracRac
994 Jefferson St.
Fall River, MA 02721
800/501-1587
Product: TracRac
Load Rating: 1,000 pounds
Construction: Heavy aluminum extrusions
Comments: This is an extremely versatile rack. The uprights and cargo tiedowns can be moved or removed at will. In most cases, the rails can be connected to the truck through the stake pockets, so there's no need to drill holes in the body.

Vanguard Manufacturing Inc.
Temple Rd.
New Ipswich, NH 03071
800/624-5000
Product: Truck Caddy Rack, Cap Rack, and Ladd Rack
Load Rating: Truck Caddy, 1,000 pounds;
Cap Rack, 500 pounds;
Ladd Rack, 400 pounds
Construction: The Truck Caddy is made from 1⅝-inch steel tubing and 3/16-inch-thick angle stock. It consists of single piece welded sides that are connected across the truck by bolt-on crossmembers. Cap Rack and Ladd Rack are bracket-mounted goal-post style racks. All racks have a standard paint finish.
Comments: A cab window protector and ladder holders are standard features on the Truck Caddy. Options include a plate that prevents stock from sliding off the front of the rack, an intermediate crossmember, and ladder hooks. The rack bolts to the bed sides and has a rear crossmember that can be unclipped and swung open for tall loads. Vanguard makes nearly 40 versions of this rack, so there's one to fit every truck.