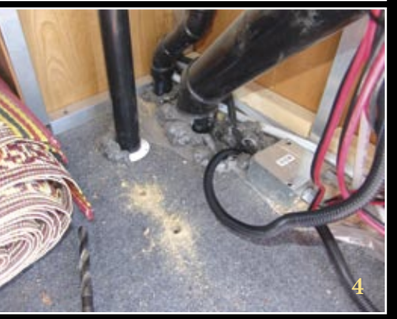
I Need "Mor" Brakes!

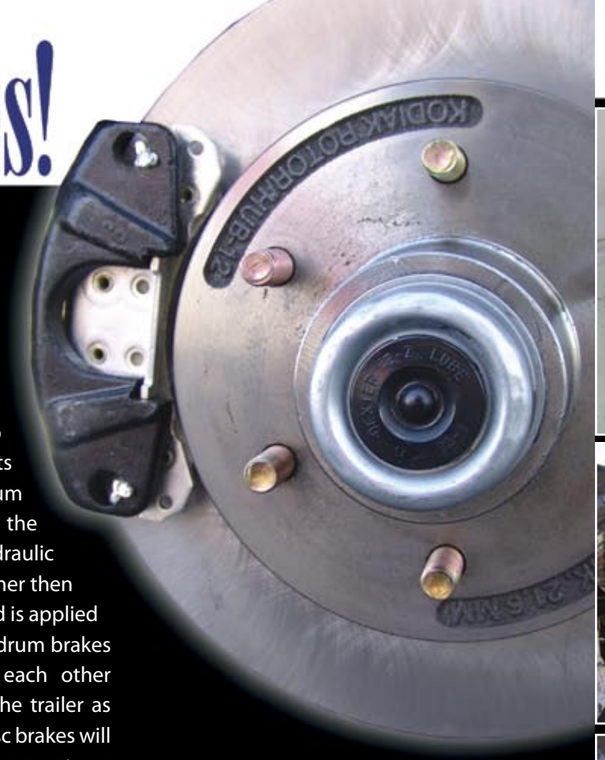

1


2


3


4


5



Why Disc brakes? Well that is exactly the question I asked Mike Butler, service manager from MOR/ryde International. Mike began to explain to me all the benefits of disc brakes over the drum brakes on a trailer. First of all the disc brakes work on a hydraulic system which is much smoother then drums because the brake fluid is applied evenly to all the wheels. The drum brakes all work independently of each other which can cause jerking of the trailer as the brakes are applied. The disc brakes will have little to no fade with temperatures up to 1500 degrees. Drum brakes tend to fade as heat builds because the heat gets trapped in the drums. The MOR/ryde system comes with vented Kodiak rotors that allow air to pass through and around them to cool off. He also told me that Tow Brake International who manufacturers the electric over hydraulic master cylinder control unit (HD3000) has done braking tests and found that the truck and trailer with the disc brake system stopped in half the distance of the drum brakes in a panic situation.

Mike also told me about the difference in maintenance. Drums brakes have multiple moving parts whereas, the Kodiak disc brakes use a single piston caliper, only one moving part. Drum brakes can get expensive to diagnose problems, because you can't see anything until you pull everything apart. Disc brakes are visible without pulling anything apart. The brake pads in the kit are GM cross-over pads that can be bought at any auto parts store. If you get in a spot where you have to change the brake pads, they can be changed by just removing the two caliper bolts and installing the pads. Then just put the bolts back in. You don't have to pull any bearings or seals; the hardest part is taking the tire off.

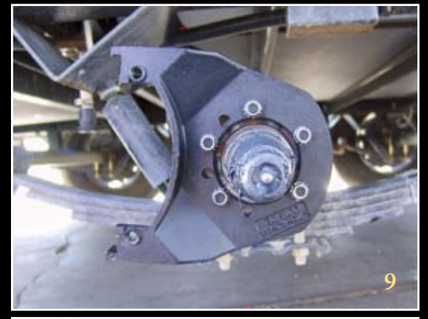
continued on page 60

 # 1 - The stock drum brakes (before).
#2 - The disc brake set-up (after).
#3 - Looking for a place to mount the control unit.
#4 - The 5/8" holes to run the brake lines through the trailer to the axles.
#5 - Master cylinder mounted to the floor with the brake lines hooked up.


6


7


8


9


10

When I asked him if there were any cons to the disc brake set up, he said there was only one: that is if the brake actuator went bad. But Tow Brake has added a couple things to put the customers mind at ease. First the master cylinder has two brake lines running back to the axles. So if one caliper or brake line starts leaking and you get air in part of the system, the brakes on the other axle will still work. Plus there is a test button that you can push before each trip if it lights up orange there is air in the line—if it comes up green all is well.

Now for the install on my three axle trailer. MOR/ryde sent out Mike Burton and Keith Danley, one of their service technicians. Then I added my personal mechanic, JR, to help. Keith and JR went right to work while Mike and I supervised. The first thing they did was jack up the trailer and secure it with jack stands. Then JR started removing all the tires, existing drum brakes, bearings, seals and backing plates. He just cut the wires to the brake magnets because we weren't going to use those again.

Keith was installing and wiring the actuator/master cylinder in the front trailer compartment. There were five wires that the HD 3000 needed to work. Three were located at the seven-wire trailer plug. The black wire should be a 14 gauge 12 volt positive from the tow vehicle. He also connected a 14 gauge 12 volt negative (white) wire to a trailer ground and the blue 16 gauge wire from the electronic brake controller in the tow vehicle. Next Keith hooked up a 16 gauge brown wire from one side of the breakaway switch. Finally a 14 gauge violet wire from the other side of the breakaway switch to 12 volt positive on the house battery and to a 30 amp circuit breaker and finally to the HD3000. After Keith had everything wired he positioned the controller in the front compartment to see where he would drill the 5/8" holes to run the metal brake lines through to get them from the master cylinder to the axles. Then he drilled the holes and hooked the brake lines through the floor to the controller master cylinder and just left them dangling under the trailer while he secured the control unit with the supplied mounting brackets.

While Keith was doing all of that JR installed the caliper mounting brackets to the axles where the backing plates used to be and torqued them to 40 ft. lbs. Then he greased all the supplied new bearings and installed them in the rotors with the new seals. He then installed the rotors onto the spindles, properly torqued them and installed the dust covers. He also cleaned the rotors of

continued on page 62

 # 6 - We were able to hook up the wires from the seven way plug at the junction box on the trailer.
#7 - Look at all the parts it takes for drum brakes.
#8 - the spindles with everthing off.
#9 - The caliper mounting bracket installed.
#10 - Installing the rotors on the spindle.

any grease or shipping material they may have been on them. Then he mounted the Kodiak calipers with the brake pads over the rotors to the mounting brackets.

The first thing they did for routing the brake lines was run a line from port A on the master cylinder down the frame and positioning it near the first axle. Then running a line down the frame from port B putting a tee next to the second axle then hooked a line to the tee to the third axle. Since the calipers were already mounted, they started laying out the brake lines to each caliper. Then they ran solid brake lines from each caliper to a tee on the axle. The tee was put close to the side where the brake lines from the master cylinder were running from. A flexible brake line was used to hook the brake lines from the frame to the ones on the axles. This allowed for the axles to move up and down without affecting the brake lines.

Next they had to bleed the brakes; first they filled the master cylinder with DOT III brake fluid without spilling any on my carpet in the storage compartment. Tow Brake recommends that you open the top bleeders on the calipers and use a vacuum pump to suck the fluid through the lines. The way we did it was have someone at the caliper farthest away from the master cylinder while someone else pushed the test button a couple of times until we got brake fluid out of the bleeder screw. We repeated this process at each caliper until all the air was out of the system. Once we thought we had all the air out of the hydraulics we verified it by pushing the test button on the HD3000 and checking for the green light. All was good, I even had Mike hold the test button while I checked each wheel to make sure none of the rotors would spin. After we completed that process we made sure all the rotors spun freely. We next checked to make sure all wires and brake lines were secured. Then all the tires were put back on and we torqued them evenly to the manufacturer's specification. Don't over-tighten the lug nuts because that can distort the assembly.

Just a couple of side notes: my trailer was only three months old and two of the grease seals had already leaked on my brake shoes on different axles. This meant I lost over 30% of my braking power and because I hadn't had the trailer very long I didn't even realize it wasn't working properly. I went on a trip the day after I had the new disc brakes installed and I couldn't believe the difference they made. They could actually slow my big tow vehicle down which had never happened before. As far as the install went we did it in a day with two experienced mechanics working on it. I didn't feel it was that difficult of an install. It was just time consuming. So make sure you put aside a whole weekend for a project like this.

If you are wondering about pricing, a standard two axle kit runs $2103.00 plus $600.00 if you want it installed at a MOR/ryde service center. Standard three axle trailer runs $2499.00 plus $827.00 to install it. These prices are for 6k, 7K or 8K axles and of course prices are subject to change.

I would like to give KUDOS to MOR/ryde as a company. This was one of the first times that a company actually went out of their way to get me the information I requested and sent out a couple of quality people at their expense to make sure the job was done right. I can't wait to check out some of the other products that they have available, especially their trailer suspension system. They also have suspensions for tow vehicles, pin boxes, accessory cabinets, and a bunch of other relevant stuff for the RVer. Check out their website at www.morryde.com or call them at 574-293-1581.

If you would like specifications on the tow brake HD3000 go to www.towbrake.com.

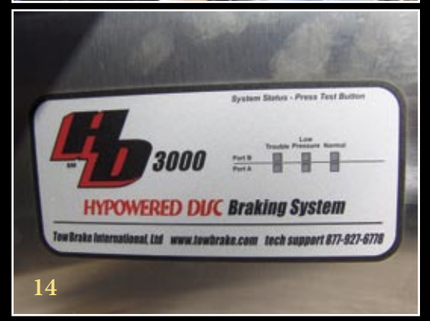
Kodiaks web site for the brake hardware is www.kodiaktrailer.com.

-THM

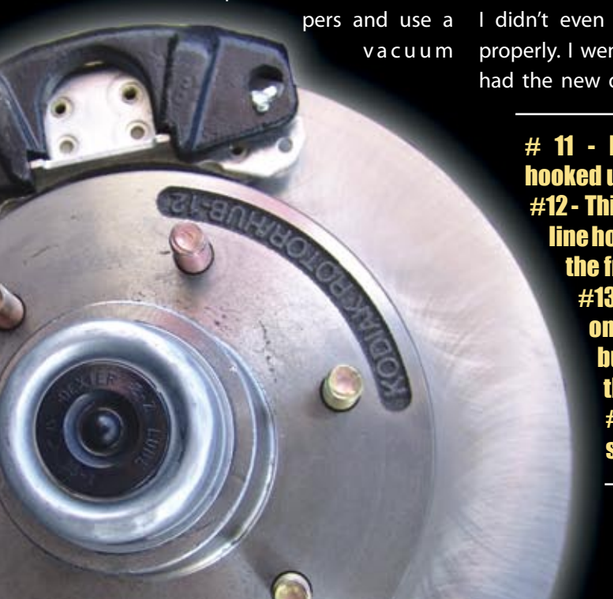

11


12


13



14



 # 11 - Rotor with the caliper hooked up.
#12 - This is where the flex brake line hooks the brake lines from the frame to the axles.
#13 - We used a rubber hose on the brake bleeder and a bucket so we didnt make a mess when we were bleeding the brakes.
#14 - After we were done we hit the test button and made sure the light was green!