

New Edge Cougars-Rear Disc Conversion

By

Jesse King

Disclaimer: This modification alters how your car came from the factory and should be noted that *in the event of a failure neither I nor Ford would be liable for anything what so ever.* Perform at your own risk and drive safely...

This How-To is designed for people who feel violated by Ford (or in my case by Roush) that these sporty cars even left the factory with rear drums and wish to remove the drums in favor of the rear disc assembly. Now some people may wonder why we would do such a thing but the answer is simple. On the performance end discs cool better than drums, therefore the occasional autox'er won't have sticking rear brakes (of which I have had) because they were so hot that the shoe was actually starting to get mushy and wouldn't release from the drum case. Upgrades are also plentiful on cougars with rear discs. On the cosmetic end they just look cool.

Getting started: First head to a junkyard/auto store and get some parts. You will need the following:

Rear Knuckle #2:

LH = F5RZ4A013D

RH = F5RZ4A013C

Rear Wheel hub/bearing (need 2) #3

LH/RH = F5RZ1104B

Rear Ebrake Cable (need 2)

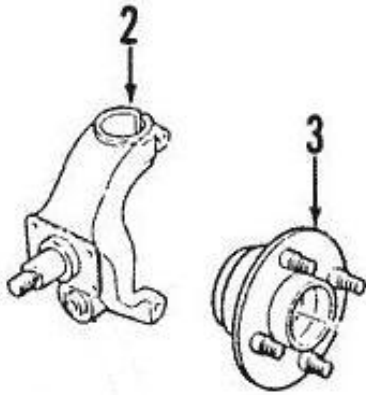
LH/RH = F8RZ2A635FA

Rear Calipers

LH = F8RZ2552AA

RH = F8RZ2553AA -Double check caliper numbers

Rotors/pads



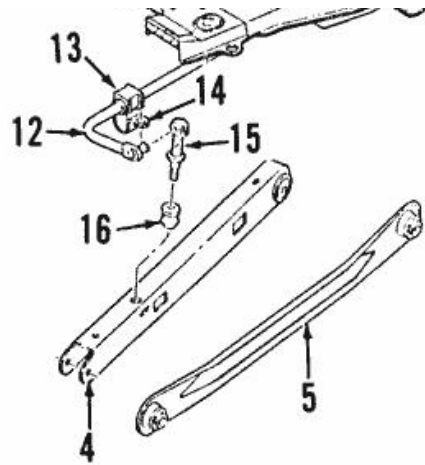
It's important to note that the wheel hub will be mounted on the knuckle and the knuckle is what attaches to the rear sub frame. Try to get these already mounted and give a rough check to verify the seals are good with no leak marks on the wheel hub and bearing, if everything checks out there is no need for new wheel bearings or special tools to remove the wheel hub assembly. I would recommend buying a good set of rotors, pads, and buying a new e-brake cable as well. Here is what you should have:



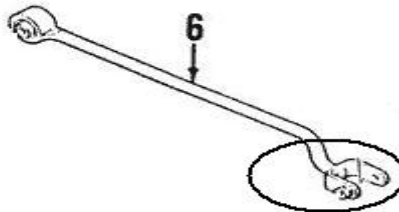
Next now that you have everything pick a good day for some friends to come over, grab a case of beer and you're ready!

Removal of drums:

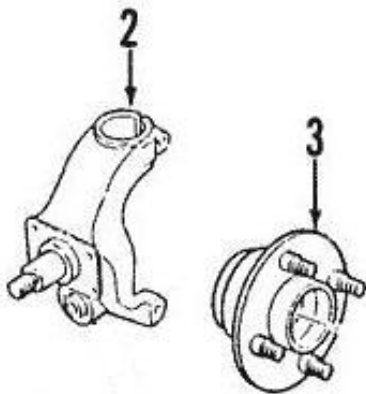
- Block the front wheels so it won't roll, jack up the rear end and support on stands
- Remove both rear wheels
- Now pick a side; for this how-to the drivers side will be LEFT
- Starting on the left side remove bolts holding the rear control arms (#4 and #5) to the drum knuckle assembly. It will be the two bolts closest to #4 in the diagram



- Next remove the tie rod bolt on the end of the tie rod that is circled below



- Remove the knuckle from the strut base; loosening the bolt closest to #2 in the diagram below does this. Use lots of penetrating lube and a rubber mallet to beat the knuckle off of the strut.



- At this point most everything should be loose, except the e-brake cable that is going into the drum. I recommend leaving this attached and when the e-brake cable is removed from the e-brake balancer underneath the car just pull out the cable and drum assembly as one piece.
- Repeat on the other side

Have about 2 beers and you'll be ready to crawl underneath the car and drop the exhaust at the 2-bolt flange after the cat. There is no need to remove the entire exhaust, once the flange is disconnected pull off one or two hangers to let the middle section of the exhaust hang down a little. Next you'll see the metal nuts holding the heat shield on, remove the section directly underneath the e-brake in the car. You can pull the heat shield out around the lower hanging exhaust pipe and that will give you access to the e-brake balancer. The rubber ends of the e-brake cable will just slide off. Slide off both sides and take the drum and cable assembly out of from under the car. Now everything is removed, good job!

Installation:

- Replace the e-brake cable with the new one that you bought for discs. Replace the heat shield and bolt the exhaust back up.
- Have a beer now that you're out from under the car.
- Take your new wheel hub and knuckle lube the part that slides on to the strut with some silicon spray to help it go on.
- Set the knuckle/hub assembly in place and get the strut going into the top of the knuckle. Now you'll have to use a jack to jack the knuckle up using the force of the compressed spring/strut to push it into the knuckle. A couple of hard hits with the rubber mallet will help as well when you're jacking the knuckle into place.
- Now that that knuckle/hub assembly is in place connect all the bolts from the lower control arms, tie rod, etc.

Remember to do the other side!

Final Product:



Last step and last beer:

Next make sure everything is tight, put on your rotors, pads and calipers and get the wheels back on there and torque to spec. Then bleed the whole system and take a test drive. Be careful at first and don't get carried away, especially since you've been drinking. Make sure the system has no air in it and everything is functioning properly. Also remember to not hammer on it too bad cause those rotors and pads need to wear in together to become really effective. Also remember to get an alignment just to make sure everything is in place.

For the skeptics:

The big question on a lot of people's minds is if the rest of the brake system is compatible. I think Ford was looking out for us when they designed the drum system. **THIS IS ONLY MY OPINION PLEASE DON'T ASSUME THIS IS RIGHT.** My theory is that since drums only need very little brake pressure to activate they should have a different Master Cylinder/Proportioning Valve assembly that sends less fluid to the rear brakes, **HOWEVER** the master cylinder is the same for both disc and drum and that caused the need for the little pressure reducer on non-ABS cars pictured here:



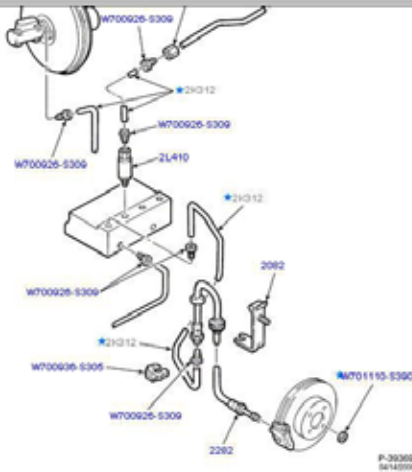
That little reducer is what keeps the rear drums/discs from locking up all the time. Remember that is just a theory. *NOTE: You will not see the reducer on drum equipped ABS cars because the Bosch ABS module regulates wheel lock up.* Here is the actual Ford catalog for the proportioning valve and master cylinder respectively, pay attention to the description, but it looks like the only difference is ABS or Traction Control. So to convert a car that has ABS drums it needs the rear discs from a car with ABS. To convert a car that doesn't have ABS it doesn't matter where the disc's come from. I happen to have ABS rear disc's on my non-ABS car so I had to cut off the ABS sensor wire that goes into the caliper, that's it. OK that should be about it, you're ready to go brag to your friends that you have a car with 4-wheel disc brakes....and sober up will ya! **Have fun and be safe!** *NOTE AUTHOR DOES NOT SUPPORT DRINKING AND DRIVING

Microcat® - Catalog: Cougar - 2N, 2001, 2N, 2 DR - COUPE (63)

2140 SRP 100%

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Callout	Description	Restrictions	Qty	DSI	From	To	SRP	Number	I
21410	VALVE ASY. - BRAKE PRESSURE CONTROL	DISC DR DRUM REAR W/ABS, ORANGE, ATTACHES AT 2282.	1	RB	1999		18.67	F7RZ 21410-CA	
21410	VALVE ASY. - BRAKE PRESSURE CONTROL	DISC DR DRUM REAR W/O ABS, YELLOW, ATTACHES AT 2282.	1	RB	1999		18.67	F7RZ 21410-BA	
21410	VALVE ASY. - BRAKE PRESSURE CONTROL	DISC DR DRUM REAR W/ABS, ORANGE, ATTACHES AT 2282.	1	-	1999		100.00	F7RZ 21410-DA	



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Callout	Description	Restrictions	Qty	DSI	From	To	SRP	Number	I
2140	BRAKE MASTER AND 2004, CYLINDER ASY.	LESS ABS.	1	-	1999		100.30	F7RZ 2140-BA	N
2140	BRAKE MASTER AND 2004, CYLINDER ASY.	W/ABS, USE ON ASY. 9788-28195-68-GC-GD.	1	-	1999		91.92	F7RZ 2140-CA	N
2140	BRAKE MASTER AND 2004, CYLINDER ASY.	ABS/ABS WITH TRACTION, SEE DESCRIPTION FOR F7RZ-CA.	1	-	1999		91.92	F7RZ 2140-DA	N

