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8.2 Litre Performance Parts  
Albuquerque, New Mexico  
[www.cad500parts.com](http://www.cad500parts.com)

## Dipstick Tube Installation, Page 1

*Please read all instruction thoroughly before installation - parts may be damaged due to improper installation!*

- ⊕ These instructions apply equally to original, NOS, and most aftermarket replacement dipstick tubes.
- ⊕ Recommended tools: A screwdriver (*without* a hex just below the handle, with a tip that will fit inside the tube), a 3/8" open end wrench, Tubing pliers for 3/8" tubing or a 9/16" box end wrench, a 6" (or bigger) carpenter's square, and a small to medium hammer. A long 5/16 punch is nice, but not necessary.



- ⊕ This entire procedure must be done with the oil pan off of the engine. It can be done in the car, but my references to 'up' and 'down' assume you have the engine upside down on an engine stand, so adjust accordingly.

- ⊕ First, remove the oil pan and dipstick from the engine.

- ⊕ Next, remove the old dipstick tube from the engine. Use your screwdriver on the bottom end of the dipstick tube, placing the tip of the screwdriver into the tube, such that the plastic screwdriver handle is against the end of the tube. If you hit the end of the tube directly with metal, it will mushroom. Tap the screwdriver handle with your hammer, As the tube starts to slide out of the block, you can use the screwdriver as a handle to straighten the tube. If you hammer on the tube with the dipstick bent where it meets the block, it will gouge, and then it won't fit through the hole.



- ⊕ Once the tube is far enough out that you can no longer use the screwdriver to push it through, remove the screwdriver and use the 3/8" open end wrench. Place the open end of the wrench around the tube, between the block and the lip on the tube, and tap on the wrench to push the tube on out. There are other reasonable ways to do this, but this method, using basic hand tools, is really as effective as anything else. With a lot of care and a little luck, this can be done such that the old tube is re-usable.



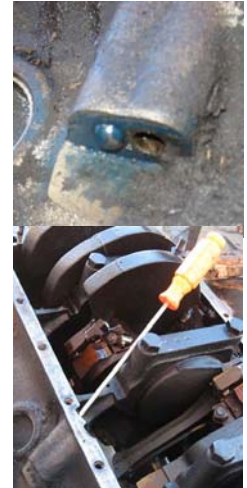
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## Dipstick Tube Installation, Page 2

⊕ If you are changing the oil pan, and you are working on a 472 or 500 block, you will want to use the other dipstick tube hole in the block. The 2 holes are close together, the front hole is for a front-sump pan, and the rear hole is for a mid- or rear-sump pan. The hole that was not used from the factory will be plugged with a ball bearing. Use the long 5/16 punch or screwdriver, to knock the ball bearing out of the hole. Try not to lose it, as they are not readily available new. If you have a tapered reamer, it is nice to clean the burr out of the hole left by the ball bearing. Go ahead and re-install the ball in the hole you will not be using (tap it in with a hammer, and then give it 1 good whack).



⊕ Next, installing the new (or used) tube. First, if you have stock exhaust manifolds, the tube is supposed to go between the manifold and the block. Put the tube up through the relevant gap from the bottom, far enough that the bottom of the tube is above the hole in the block, so that when you are done, the tube is in the right place. I prefer to remove the manifold, but if you break manifold bolts you will be in for a lot more work.

⊕ Line the bottom of the tube up with the hole, and use your screwdriver to drive it through the hole, just as you used the screwdriver to remove it. As you drive it in, if you are using the rear hole, it will hit the main bearing cap. Before it does, put your 9/16" box wrench over the tube, and start bending it a little at a time so it goes to the rear of the cap. Continue driving it in, until the lip is against the block. If the tube is going in too tight, you may have to ream the hole (if it's the hole that had the ball in it before), or use some sandpaper to reduce the OD of the dipstick tube slightly. You should not have to beat on it hard with your hammer to get it in - doing so is likely to bend, mushroom, or crack the tube. It is supposed to be a light press fit.



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### Dipstick Tube Installation, Page 3

- ⊕ Once the tube is all the way in, ensure it is tight in the hole so it won't move. Use a hammer and center punch, making a punch divot on the flat surface of the block next to the hole, as close as possible to the tube. This is called 'peening', and what you are doing is distorting the cast iron, making the whole a tighter fit.
- ⊕ Measure the oil depth - Put the correct amount of oil in your oil pan (or, if the pan is clean, you can use water), and set the oil pan level on the ground. Measure from the oil gasket surface on the pan down to the top of the oil (or water). You may skip this step and use my measurement on the stock El-do pan I used for this demonstration, at just a hair over 5".
- ⊕ Bend the tube - Install the dipstick, set your square on the oil pan rail, and set up your tools for rotating the crank. You want to make sure that when you are done bending the tube, you meet 2 conditions - 1, the rotating parts do no hit the dipstick or tube, and 2 - the full mark is roughly 5" up from the oil pan gasket surface on the block.
- ⊕ If you have any questions or suggestions, feel free to call or e-mail any time.

