

MERCEDES BENZ KOMPRESSOR

PULLEY

INSTALLATION GUIDE

And the most important thing before you start, please read carefully whole guide before first activity. It will give you a view of pulley installation. What tools you should prepare, what mistakes avoid. Good tips (blue text) are preferred. Text red marked means, that those activities are absolutely extreme and unnecessary!

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Have a nice work!

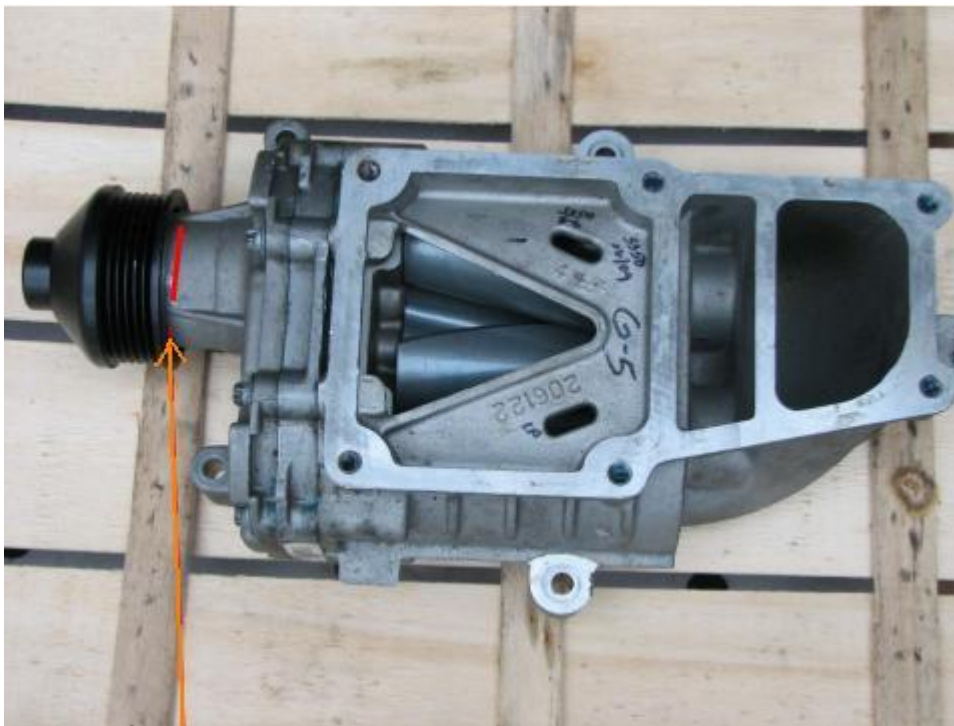
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Step 1. Remove your kompressor from a car.

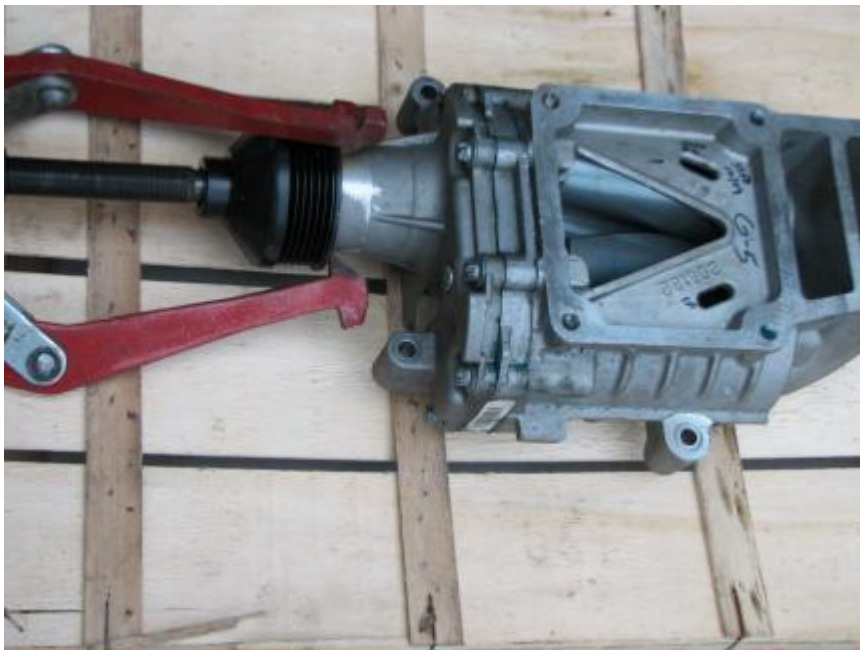
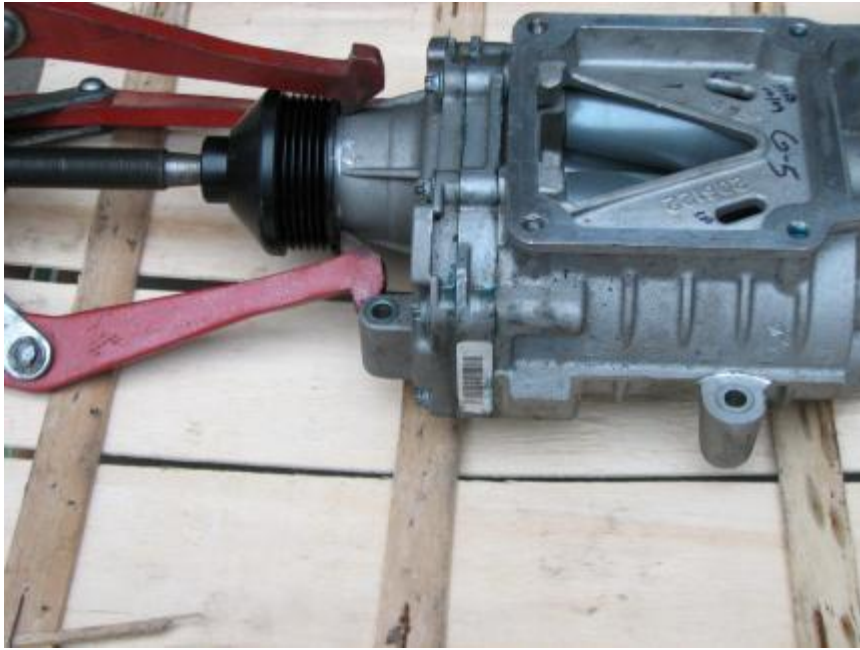
Step 2. This is removed compressor (here it's EATON M45 type), but installation in M65 type is the same.

This is a very important thing now! Pulleys are universal, there is many models of Eatons and pulleys sometimes have different height, but grooves are always in the same place. So you should mark a line (using marker or correction pen) where is the end of stock pulley – on the kompressor body. If you mark it, later you will see how deep you have to tighten new pulley.



Good tip: Now you can prepare the bearing puller / pulley remover. The best is hydraulic because it's 3x stronger than normal hand operated (which I use). So if you want to save time and & have less stress - use hydraulic. However hydraulic one is less precise. I have an ordinary hand operated puller with 300mm legs spacing.

Step 3. Get the pulley remover, it should be a big remover, the best is 300 mm like in the picture, also enough will be 150-200 mm. But smaller removers don't have enough power to help us. Try to remove the pulley slowly



Good tip: Only concerns hand operated removers – if the pulley goes not well and remover is fastened to the pulley you can hit the top part of the remover's shaft, using a hammer. It causes looseness between pulley and the supercharger's shaft.

Step 4. When your remover doesn't have enough power, just use the gas burner powered from normal gas bottle to heat the pulley. But the gas burner should be serious, not for small soldering. Heat gun is also too weak. When the pulley is heated, removing is easier.

Good burner:



Too small burners (don't use):





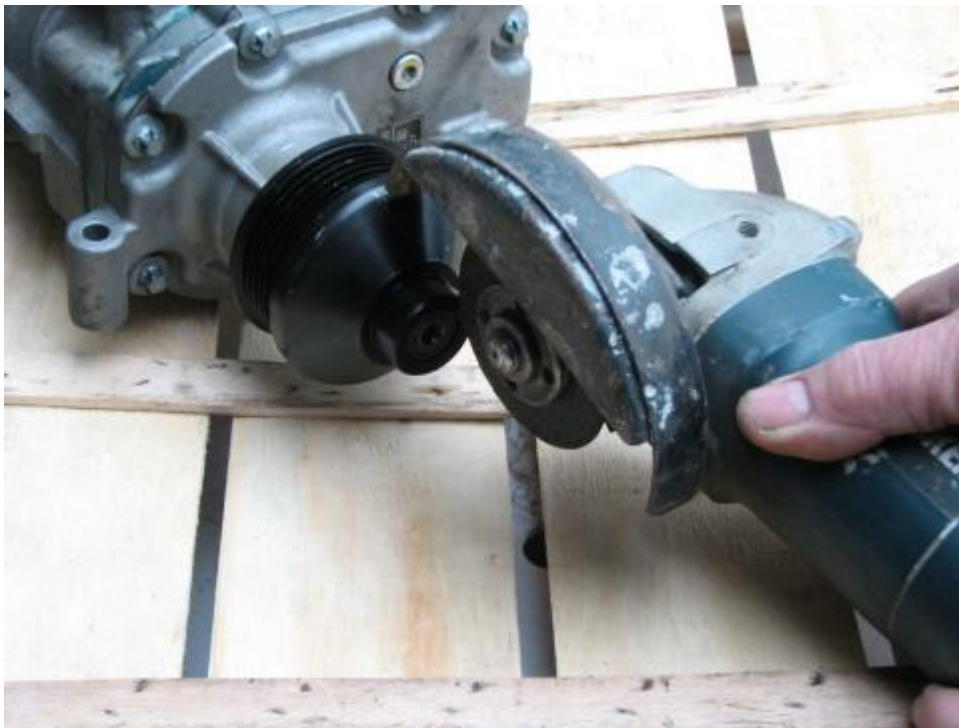
Good tip: do not overheat the old pulley. Remember, there is a hidden seal behind the pulley. Overheating can cause seal failure. But also don't be scared. Just heat reasonably.

Step 5. It's done.

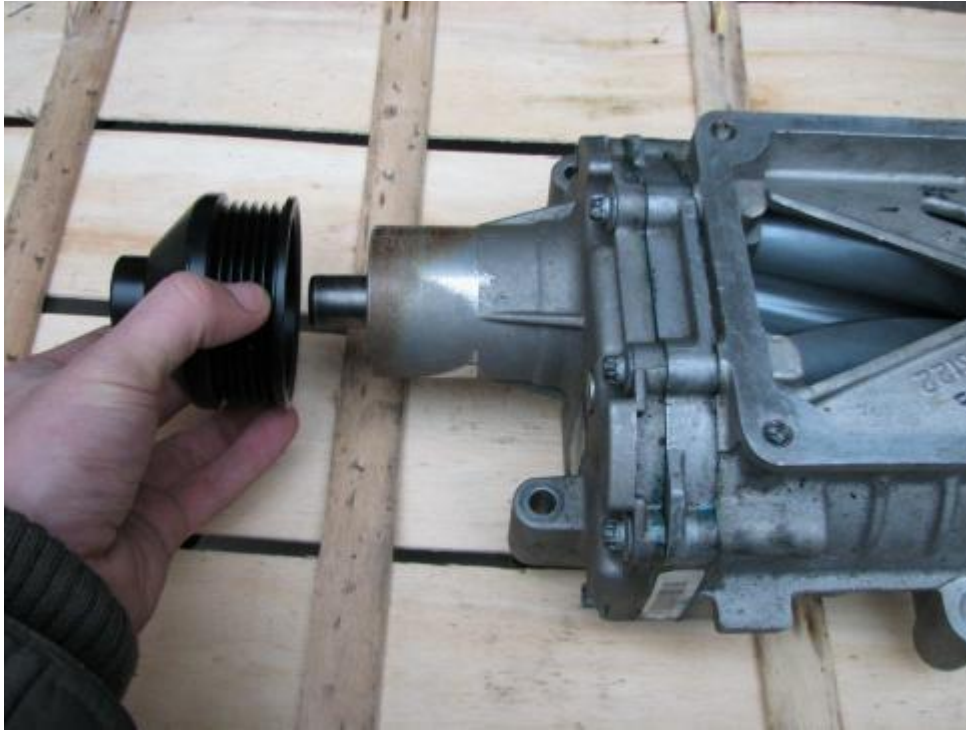




If it won't help or you don't have pulley remover or burner, you can do following. Just take angle grinder and cut the old pulley in parallel to the shaft. Be carefull, don't cut the shaft! Remember that using the pulley remover is best choice, burner a bit worse than remover and the cutting will destroy your old pulley. Another way is to drill holes in the pulley's top – around the shaft, later you can simply crush the pulley.



Step 6. Check pulley fitment.

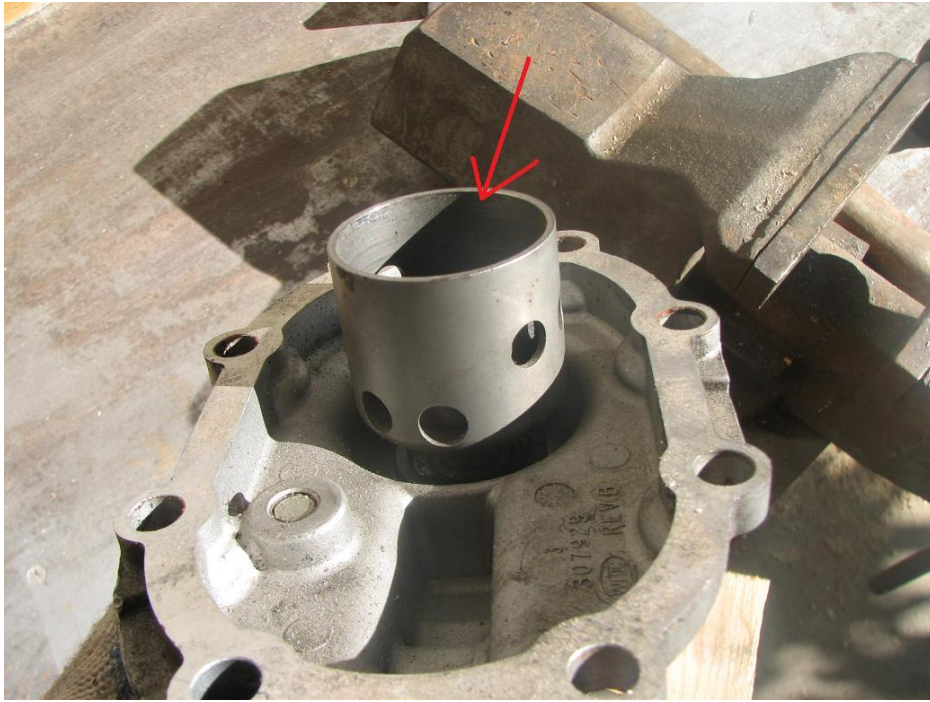


Step 7. Before the final new pulley installation you should heat a pulley's hole using burner (the same like in Step 4), but with smaller nozzle, suitable to the hole. Then pulley's hole expands. At least you can put the whole pulley into an oven or microwave, and set the time at 8 minutes and temp at '2' (so 70% range) or use heat gun.

During the same time you can freeze the shaft using a 'freeze in spray', which you can buy in automotive shops. At least you can use normal ice, prepared earlier and put compressor upside down (shaft in the ice), leaning against the wall. Then the shaft shrinks. That makes new pulley installation easier :)

Very important! Pulley after heating **as soon as possible** must be installed on the shaft, because cools quickly and shaft quickly warms up. You must carry a teflon, rubber mallet or normal hammer. After 2 seconds you can't move the pulley on shaft using hand. Now you pound the pulley and move the pulley with hammer help. And now the line you marked at start is very helpfull. Do not cross the line, one mm too much can cause, that pulley can touch the compressor body, wipe, and fall from the shaft.

To avoid supercharger failure, you can always open the blower housing. You must catch the shaft at its end and block it (red marked place).



Now you can push the pulley onto the shaft. To not make the pulley flatten – when you hit it using hammer, please get a piece of wood – for example oak plank. Hit the plank, not the pulley directly. In some cases, when the housing was not disassembled, the shaft can go back closer to rotors and then any installations of pulley would be incorrect. Shaft will be ‘too short’ and pulley not well positioned – so belt can be cut soon.



If you prefer different pulley installation, skip this step and go to the Step 8. But methinks installation with heating is easier.

Step 8. Take the tools: screwing bolt (important - should be hardened), nuts, washer and ratchet.



a) prepare long (but not too much... around 1-1,5 inch or 4-5 cm) screwing bolt. How you can recognize if bolt is hardened? See the letters/numbers stamped onto bolt's head. In different countries different symbols mean hardened steel (medium or high carbon steel). An ordinary, low carbon steel screwing bolt could be also ok, but if it's old, there is a risk of crack. No fun, when a piece of bolt sits in the shaft. Sometimes I use low carbon bolts ;)

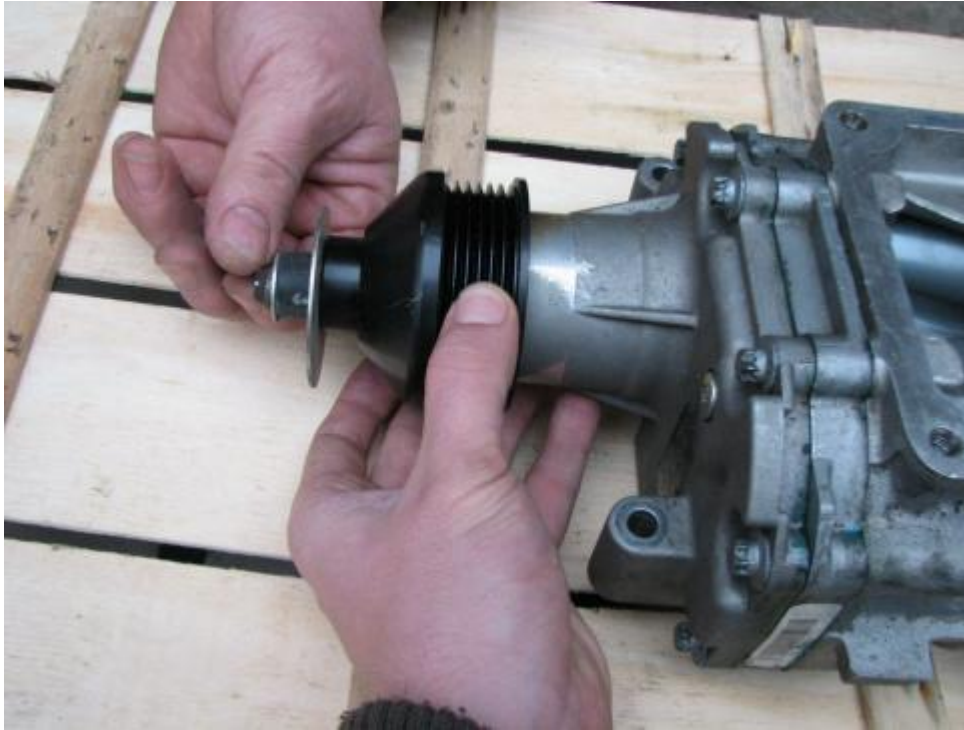
b) put nuts on the bolt, they will be used as spacers, nut's inside diameter must be bigger than bolt's thread and nuts must move on bolt without screwing! You can also use a sleeve instead of nuts if you have it

c) put enough number of nuts

d) at the end of the bolt leave a suitable washer, washer will push pulley during screwing

e) block the rotors using something hard + rag. It will help you avoid scratches on rotors. I use an old ratched for blocking rotors.

Step 9. Tighten down the screwing bolt

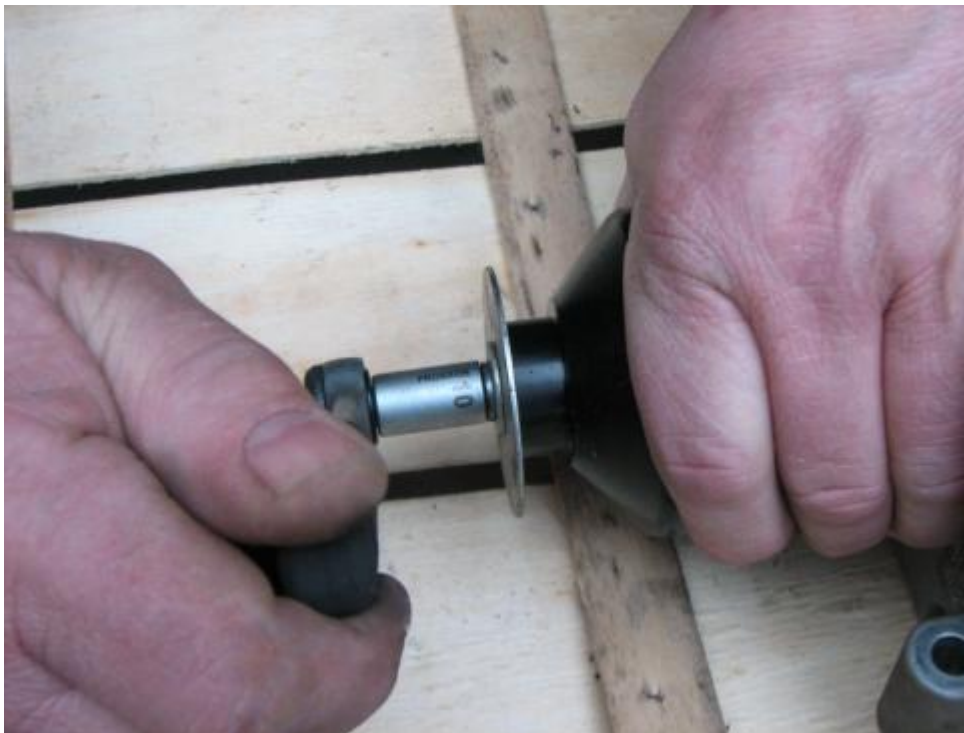


Good tip:

- a) If your labor is one man, you can put your foot on compressor during screwing
- b) If the new pulley screwing goes slow and difficult, and pulley doesn't want to move well on shaft, it's probably due you didn't heat a hole and didn't freeze a shaft. But never mind. Get a big ratchet and go ahead, I use Wera Koloss with adapter, which has got in total almost 70 cm long and works fine.



Step 10. Use the one hand to hold a pulley a second to screw it.



Screw to the place, where was the old pulley. And now the line you marked at start is very helpful again.

Take a new pulley, if you see that the pulley goes hard on shaft, you can ream a end of whole from the inner side (green line). But you can't touch the wall inside the whole (red 'x' marked in the picture)!!!



For this activity the best tool is reamer, at least you can use sandpaper.



But better is abrasive mop (flap wheel). Grit 40-80.



Step 11. It's done. Great job, enjoy new pulley



ATTENTION!!!

When the pulley doesn't go 'to the end' – I mean the end of pulley's pin is not equally with the end of the shaft – then you must machine or grind the supercharger's casing. If you don't do it, the pulley will work too far from the supercharger's body and the serpentine belt works askew. After 1000 km the pulley can cut the belt!

This situation happens ONLY in 5% of all Eaton superchargers.

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