

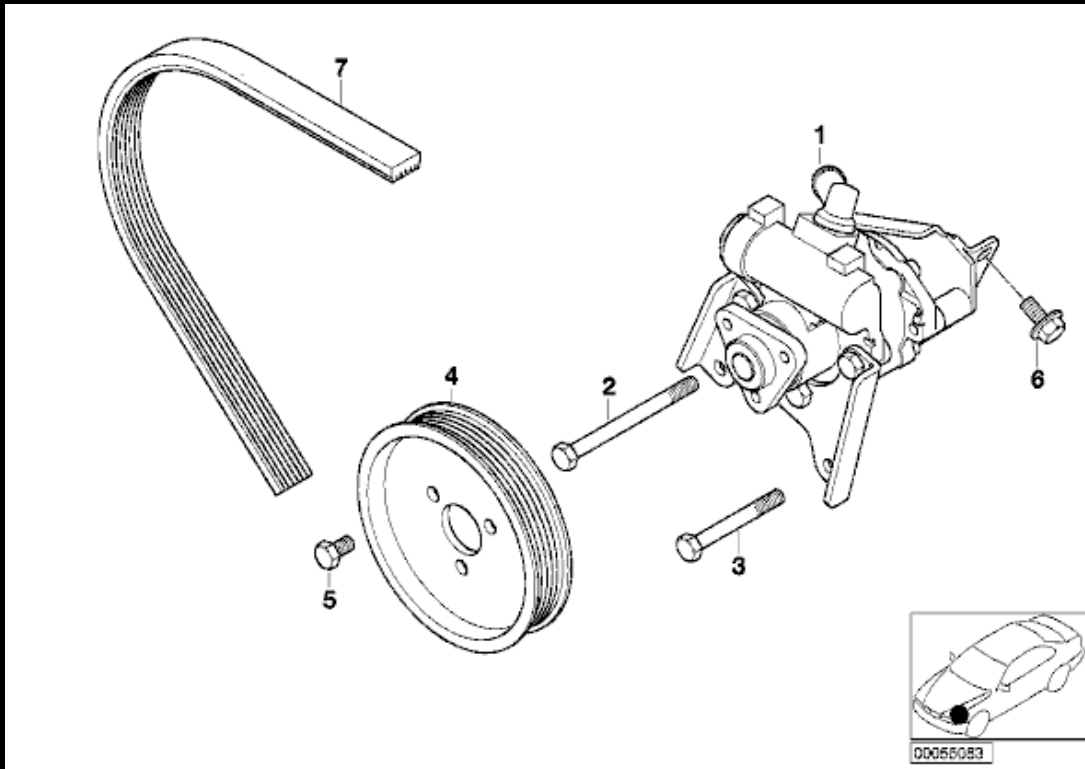
## Power Steering Pump Replacement

It seems that many BMWs suffer from power steering pump failures. The pump shaft usually breaks and causes noisy steering at first, with increased steering stiffness and finally, power steering failure. I knew mine was on its way out since I experienced intense vibrations during steering and excessive "moaming" noise. Finally the pump failed and left me without PAS in the middle of the highway.

This is a very expensive part to replace so I bought it from USA through <http://www.pelicanparts.com>. They carry almost all parts for the entire range of BMWs with very attractive prices compared to here, even with import taxes applied. Their customer support is excellent!

They had a rebuilt ZF model and a brand new LUK-LF20 so I chose the LUK. It was the same as the failed one on my motor. Delivery was super fast from the US using the cheap global express mail. Arrived in 3 days!

I also ordered 2 litres of Mobil ATF power steering fluid to top up.



No.	Description	Supplement	Qty	From	Up To	Part Number	Price	Notes
	BEFORE ORDERING WING PUMP, REPAIR HISTORY OF VEHICLE AND PUMA MEASURE NO. AG 4 4690692 (CURRENT RELEASE) MUST BE OBSERVED!							
01	VANE PUMP	LUK LF-20	1	09/1999	09/2001	32416760036	\$530.10	+core
02	HEX BOLT WITH WASHER	M8X100-Z1-ZNS	1	09/1999		07119901788	\$1.23	
03	HEX BOLT WITH WASHER	M8X70-Z1-ZNS	1	09/1999		07119900265	\$0.84	
04	PULLEY	D=131MM	1			32421740858		
05	HEX BOLT WITH WASHER	M8X14	3			07119915067	\$0.28	
06	HEX BOLT WITH WASHER	M8X18-Z1-ZNS	1		04/2003	07119900498	\$0.39	
07	RIBBED V-BELT	6PK X 1538	1			11281706545	\$37.67	

Installation:

1. Lift the car or put it on jack-stands.
2. Remove plastic splasher (8 screws)
3. Remove A/C belt (Click here for DIY -- not ready yet--)
4. Remove Engine belt (Click here for DIY -- not ready yet--)
5. Disconnect the two hoses paying special attention not to break the plastic snap clips. Good idea and time to replace the whole hose since they tend to leak at some point.
6. Remove the bolts #2,3 and 6 and the pump will drop. Be careful, ATF oil will spill
7. Remove pulley by removing bolt #5 (3 in total). Pulley is plastic and breaks easily, be gentle!
8. Install the new pump exactly the reverse way
9. Lower the car and top up the missing ATF fluid
10. Start the engine and turn steering wheel full lock left and right. You will see bubbles coming out from the ATF tank which is the trapped air. Should stop at some point and the system will be free from air.

Time: 40 Minutes (When working with a car lift)