

[http://www.volvexc.com/resources/how-to/pdf/2001-v70xc-bevel\\_gear\\_oil\\_replacement.pdf](http://www.volvexc.com/resources/how-to/pdf/2001-v70xc-bevel_gear_oil_replacement.pdf)

## **V70XC Bevel Gear (aka Angle Gear) Oil Change**

### **1997-2000**

The bevel gear (#8601587) is a very expensive part of the AWD-system of the 1<sup>st</sup> generation of the Volvo V70XC. I immediately began looking for information concerning the maintenance of the bevel gear assembly and found very little about maintenance, but a wealth of information about people having to replace the bevel gear. I then decided that I should at least change the gear oil in the housing which the bevel gear assembly rides. Unfortunately, no drain plug is provided! After a conversation with a Volvo service manager, who told me that they always install a drain plug in the housing (by drilling and tapping the aluminum case) at the 60K service (and change oil every 60K thereafter), I decided that it must be done on my car *but without the drilling and tapping for a drain plug*. What follows is the method I used.

**This method seems to work perfectly, but your mileage may vary!**

#### **Parts needed**

- 1 - Volvo Transmission Fluid (1 liter – Part No. 1161648)
- 1 – optional Volvo gasket #11998 (copper crush washer)
- 1 - Empty soda jug or equivalent (for old gear oil)
- 1 - Mityvac vacuum pump or equivalent
- a couple of small rags

#### **Step #1**

Raise the front-end of the car up on ramps or jack stands...



V70XC Bevel Gear Oil Change (1997-2000)

2

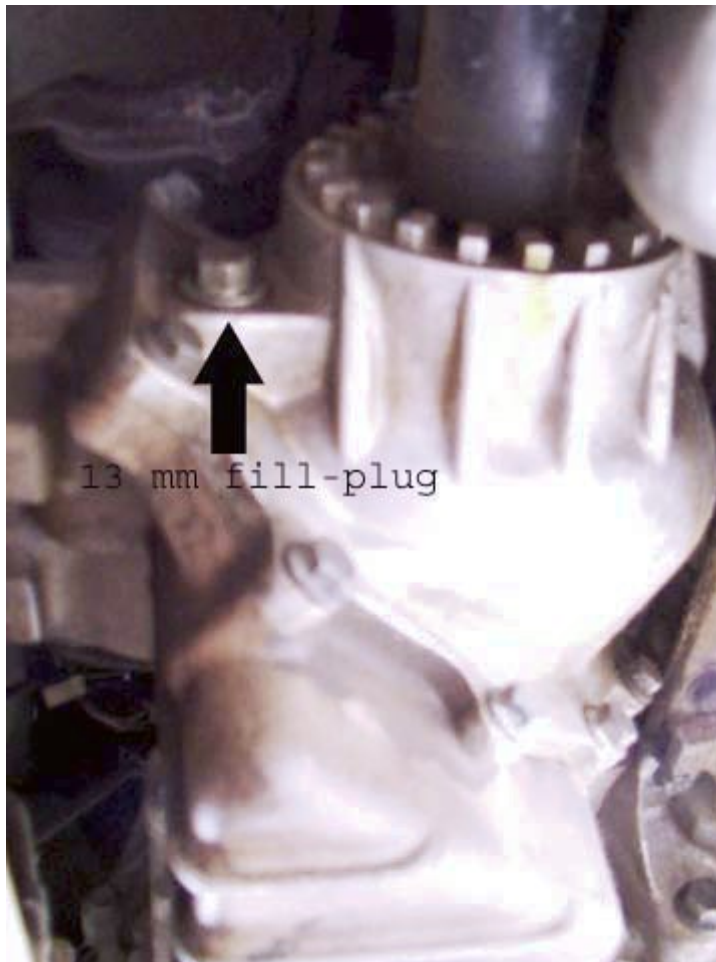
### Step #2

Set the parking brake...unless you like to live dangerously!



### Step #3

From the front of the car look at the back of the engine block and find the bevel gear housing and the 13mm fill-hole. The fill-hole plug will be on the side of the housing *facing* the passenger side drive shaft (black shaft coming out of housing at top of picture below ).



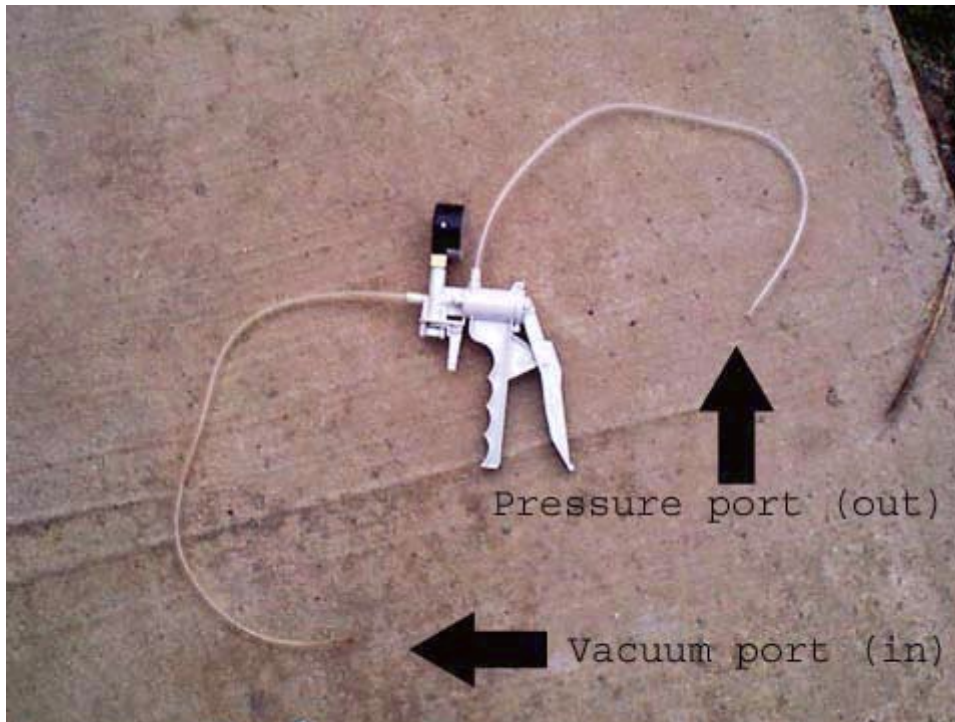
#### V70XC Bevel Gear Oil Change (1997-2000)

3

With rag handy (gear oil will dribble out of fill-hole) remove 13mm fill-plug from bevel gear housing and don't lose the crush washer (Volvo #11998) unless you bought a new one. Plug fill-hole with rag to prevent dripping.

#### **Step #4**

Hook hoses to mityvac vacuum pump. The hoses are part of the kit which comes with the pump.



#### V70XC Bevel Gear Oil Change (1997-2000)

4

##### **Step #5**

Insert the hose from the vacuum port (in) on the mityvac into the fill-hole of the bevel gear housing. Wiggle the hose as you insert it so that you are sure the hose has reached the bottom of the bevel gear housing. Place the pressure port (out) hose into the soda jug or any container capable of holding at least 0.75 liter.

Begin pumping the old gear oil out of the housing and collecting it in the soda bottle. I prefer the soda bottle for two reasons: 1) I can see the old oil going into the bottle and it is easy to see that 0.75 liter of used oil has gone into the bottle and 2) it is easy to cap and take to recycling.



#### V70XC Bevel Gear Oil Change (1997-2000)

5

##### **Step #6**

After removing all of the old gear clean out the mityvac pump and hoses by pumping the handle a few times. This will get most of the old gear oil out of the unit and the hoses. I took the hoses off and blew compressed air through the lines; though very little gear oil came out. Now place the pressure port (out) hose into the fill-hole of the bevel gear housing and the vacuum port (in) hose into the bottle of Volvo Transmission Oil. Pump the handle on the mityvac and the new gear oil will be drawn out of the bottle and pumped into the bevel gear housing. Continue pumping until gear oil begins to dribble out of the fill hole of the housing. Immediately replace fill plug (don't forget the crush washer on the plug). Check the bottle of Volvo Transmission Oil to make sure it has about 0.25 liter left in it (this is just a check to make sure that, in fact, you have filled the housing with the correct amount). Replace and **torque the fill-plug to 35Nm (25-26 lb ft)**. Volvo recommends that the oil just come to the lower threads of the fill-plug. You might want to check the level on flat ground. When I checked mine it was perfect!



---

<http://www.freewebs.com/howardsvolvos/driveline.htm>

Excellent website!!!!

## **Howard's Volvo Maintenance**

- [HOME](#)
- [NOTES BEFORE BUYING](#)
- [COMMON FAILURES](#)
- [REPAIR SHOPS](#)
- [BODY](#)
- [ENGINE](#)
- [MOTOR TRANSMISSION MOUNT](#)
- [BRAKES](#)
- [OIL LEAKS](#)
- [DRIVE LINE](#)
- [ELECTRICAL & ELECTRONICS](#)
- [STEERING](#)
- [SUSPENSION](#)
- [PREVENTIVE](#)
- [MISC ISSUES](#)
- [PARTS SOURCE](#)
- [TOOLS AND OBDII CODES](#)

- [REPAIR PROCEDURES AND FORUMS](#)
- [PERFORMANCE IMPROVEMENT](#)
- [GUESTBOOK](#)

## Transmission Issues

Transmission is the key weak point of this car. Lots of people have various problems with it ranging from minor to significant. Furthermore, diagnosing the exact problem seems quite difficult. Often, it is a little bit trial and error to go through all the typical problem areas. I get the sense from reading the forums most dealer service departments typically goes for the repair that guarantees the fix (replacing the transmission). But it is also the most expensive (~\$4000 or more). I'd imagine if dealers do these smaller repairs first but doesn't fix the problem. They probably get unhappy customers.

I've compiled a list of low cost things to check if you are having tranny problems. These are much cheaper if you can do some simple do it yourself repairs. Nothing here is too difficult.

First of all, I should say I have only experienced the 3 following list transmission problems on my cars.

- Wrong ATF fluid type. This cause transmission to shift funny
- Gear 2 to 3 flare in manual shift mode on the geartronic transmission. What I have isn't too bad. Just take about 1 second or so before engaging into third when I go up hill. Other people report much worse including experiencing this in auto shift mode. BTW, nothing I did could fix this. I'm guessing I need a new valve body if I want to get rid of this minor issue on my car.

So here are a check list for low cost remedies

- If you have year 2001 or 2002, check your transmission serial number to see if you have a defectively design B4 servo cover. See [here](#).
- Change your transmission fluid. See [here](#) and [here](#).
- Check your lower transmission torque mount. See [here](#).
- Make sure you have the latest transmission software installed. See [here](#). Might do the adaptation too (it will cost more). The adaptation (see [here](#) for more details) is basically a particular driving pattern that trains the transmission computer to shift as smooth as possible based on the current conditions in the transmission. It is possible to have dealer tech just turn on the adaptation mode and you go ahead and do the driving patterns yourself. If you can convince your dealer to do this, before to get the driving pattern directions. I'd do the adaptation after all above items are checked and/or corrected first.

I have done all these on both of my 01s (except adaptation). And other than the slight 2-3 flair in manual shift mode. My transmission runs fine at 115k miles and 83k miles. So I think it is worth it to do a little maintenance to avoid the big costs later.

Beyond this, you are probably looking at a valve body replacement (~\$2000) or new transmission (~\$5000).

A few things to note before you undertake any of this effort.

- Dealers service departments seem to be evolving away from doing these fixes and only promote the full transmission replacement. I'm guessing since none of the fixes above "guarantees" the fix, the dealer ends up eating the cost if the fix doesn't work. This is obviously not a good business practice so I'm guessing they evolved away from this.
- Before undertaking any of these fixes yourself. If you have full dealer service records and have warranty that expired within a year, Volvo regional and the dealer have been known to kick in some discounts on your transmission replacement. But if they know you had these services done DIY or at a non-Volvo dealer/independent repair, I wonder if they are less likely to offer the discount. Something to consider.

### **"New" Transmission**

For those of you thinking about getting a replacement transmission from Volvo. You should know that the "new" transmission is not new. It is a rebuilt. And I've read a lot of people have problems with these rebuilds right after installation and some gradually turn in to significant shifting problems within a couple of years. I don't know the exact reason but it seems pretty clear that the rebuilds don't work as well as when these transmissions were brand new.

After reading more about all the different moving parts for these modern transmissions, I've come to realize there is NO WAY to rebuild it properly without a huge amount of work and energy. There are so many moving parts and the cavity these moving parts slide in. There are lots of places that maybe worn. Can you imagine the rebuilder measuring the tolerances of all of these moving parts? I really doubt it. So unfortunately for us... there may not be any good solutions for us. Even replacement transmissions may have worn parts from the very beginning.

Failing ABS and MAF can also cause poor shifts. I guess these units must also affect the transmission computer (through the engine computer). After replacing my failing ABS and MAF, transmission also shifted much smoother after a few days of adaptation. Failing MAF will give other symptoms such as rough idle, sputtering and random shutdown. Failing ABS will give errors such as ABS light.

### **How do I check ATF level?**

I see this question asked here and there. And this car does hide the ATF stick pretty well.

You can see the transmission between the head/intake manifold and the air filter box. You will see a horizontal plastic tube feeding the underside of the intake manifold. Then there is a soft 1.5" diameter tube running perpendicular below that. Radiator fluid goes in this tube. The ATF stick (yellow color) hides just beneath the intersection between these 2 parts. It is near the "front" (facing the radiator) of the transmission housing.

To check the fluid level, the ATF need to be hot so drive the car for awhile. Then stop (don't shut off the engine), step on the brake and put the gear selector in every position (RND123) for 3 seconds or so. Then return it to P and still leave the engine running. Now wear some gloves as the radiator hose will be hot when you fish for the ATF stick and check for the level. Keep your hand away from the electric fan mounted to the radiator. It could come on at any time.

## TCM (Transmission Control Module) software update

The latest transmission software update is a significant improvement. It has a shift/lockup profile that allows the engine to stay in the good part of the torque curve more often (~2400 RPM for the T5). Consequently, the car is more responsive. Part Number for this update is 30677036. About \$25 for the software and 1/2 hour labor.

My dealer service department told me is a chance this update may require transmission adaptation (I have never heard of this from other forum members). This adaptation is a 1.5 hour long procedure with varying driving pattern to teaches the transmission electronics how to shift smoothly. This would obviously cost more. My dealer service department said they can't predict if adaptation would be necessary before the TCM update. Luckily for me, it was not necessary.

See [here](#) for more info on transmission adaptation.

This software update seems to be available sometime during 2004. From what I have read, early 2004s didn't receive this software during manufacturing.

It seems everyone is happy with this update. Especially the new shift profile.

I have both an 01 V70 T5 and 01 XC70. The improvement is very significant on the T5 and maybe only slight on the XC70. The T5 engine has a higher pressure turbo which takes longer to build up the pressure. This is the reason the good part of the torque band is above 2000 RPM. The new TCM software changes the shift profile to allow the T5's engine be in the good part of the torque band more often.

[http://volvospeed.com/vs\\_forum/index.php?showtopic=44033](http://volvospeed.com/vs_forum/index.php?showtopic=44033)

## Transmission Adaptation

The automatic transmission can be relearn how to shift smoothly based on the latest internal transmission conditions. Based on this, I'd imagine it is good to perform all of the updates to the transmission first before doing this adaptation. For example, get the latest TCM software, flush the transmission fluid etc. I don't have any actual information that this order is the best. I just made a guess based on the purpose of the adaptation.

You need to have the VADIS (expensive equipment, dealer service shop has it) to set the transmission in adaptation mode. Then you can use the following directions to perform the necessary drive cycles to have the transmission learn how to shift smoothly.

<http://www.sonnax.com/tech-articles/TASC-TIP-07-08.pdf>

## Transmission fluid change

This car does not have an externally replaceable transmission filter. It is important to change transmission fluid even though Volvo has no recommendations. Given this transmission is the weak point of this car. I think you can't flush the fluid too often. Some people do 15k mile drain+fill and 30k mile flush. I think it might be good to do a 20k mile flushes to limit the wears on the solenoid valves.

**\*IMPORTANT\*** If the car has high mileage and you don't know ATF's replacement history. You might not want to do a flush. Flush loosens gunk in the transmission and circulate it around which can jam valves. Mechanics often recommend drain+fill (replace 1/2 of the fluid) follow by another drain+fill in a couple thousand miles. I haven't heard flush kills tranny for this car too often (did read a case the other day). I had an early 90s BMW, flushing those trannys at over 100k killed quite a few of those transmissions.

I flushed my ATF per directions below with Amsoil Universal Synthetic ATF. I had a lot of shift problems after. It appears to be not JWS3309 compatible (Note: the latest Amsoil ATF appears to be 3309 compatible. Just read the label). **I then flush it with Mobil 3309 ATF and the shift quality is back to normal. Definitely stick with Mobil 3309.** Below is also a link to Schultz Lubricants where I got my 3309 from. I got 1 case of 12 quarts for \$45 + \$18 shipping from MA to WA (\$30+ shipping when I checked recently!)

Since this car's transmission is made by Aisin Warner (owned by Toyota). Toyota dealers carry the same 3309 compliant fluid for much cheaper than Volvo and common availability. Ask for Type IV transmission fluid from the Toyota dealer. It runs about \$5 a quart.

<http://www.volvoxc.com/forums/showthread.php?t=5668>

<http://www.volvoxc.com/forums/showthread.php?t=244>

<http://www.schultzlubricants.com/>

To measure the ATF level, you have to use the following procedure. It is more than checking the dipstick with the engine off.

<http://www.volvoxc.com/forums/showthread.php?t=7933>

#### **Fill From Dip Stick Hole ONLY**

There seems to be a not so rare mistake (maybe some repair manual somewhere show a wrong procedure) where the repair shop would remove a particular bolt on this transmission to fill ATF. This kills third gear and require the transmission to be rebuilt or replaced (\$4000+). So make sure you don't make this mistake. If you take the car to an unknown Volvo specific shop, make sure they know this. Here is one such horror story

<http://www.volvoxc.com/forums/showthread.php?t=15297>

#### **B4 servo cover replacement**

A common problem with this transmission is the second to third or third to fourth gear shift flare. A shift flare is when the RPM "flares" up to about 3000+ RPM momentarily while the car is shifting between 2 gears.

One possible problem is a faulty design on the B4 servo cover. There is a washer that breaks loose causing shifting mechanisms to be imprecise. This part is only about \$20 and requires probably 30 min to install. If you have the 2-3 or 3-4 shift flare, you might consider trying this. Only certain transmission serial numbers have this faulty design. The serial number is easily visible from the engine compartment. It is on a plate on top of the transmission. Here are the list transmissions SNs with this faulty design along with the replacement direction

<http://www.volvoxc.com/resources/how-to/pdf/b4-servo-cover.pdf>

Here is a tip if you were to replace your B4 servo cover. My old cover had 2 o-rings while the newly designed part came with 3. When I tried to put the new cover on with all 3 o-rings, it just wouldn't go in. It turns out the middle groove on the newly designed B4 cover isn't for an O-ring. The extra O-ring is to replace the ring on the "Piston". With the correct 2 O-rings on the cover and a new ring on the piston, the cover went in easily.

Additional directions are here

<http://www.volvoxc.com/forums/showpost.php?p=74955&postcount=3>

## Angle gear fluid leaks

On the XC70 AWD system, angle gear is basically the converts the horizontal drive shaft coming out of the transmission to the drive shaft going to the rear of the car. It is a 90 degree angle turn. Therefore, I guess they named it "angle gear".

Seems the seal facing the passenger side leaks quite often. The Volvo tech in the following link claims to have never seen one that didn't leak. If your car is still under warranty, ask them to check it on the next service.

[http://www.volvoforums.com/m\\_105354/tm.htm](http://www.volvoforums.com/m_105354/tm.htm)

It is important to keep appropriate fluid levels in the angle gear. Given the frequent seal leak (but probably minor in most cases) here and having only 700mL of fluid in here, you might want to check the level during every oil change. To check the level, you can use any straight piece of tool (I used a straightened metal paper clip, a screw driver would probably work) and inserted in the oil filler hole at a downward angle to see if you get oil on the tip of the tool.

Here are the directions to change this fluid

[http://www.volvexc.com/resources/how-to/pdf/2001-v70xc-bevel\\_gear\\_oil\\_replacement.pdf](http://www.volvexc.com/resources/how-to/pdf/2001-v70xc-bevel_gear_oil_replacement.pdf)

## Installing Magnafine ATF filter

Since these cars have no externally changeable ATF filter, some Volvo forum members went on to install a Magnafine filter in the ATF return line (from ATF cooler integrated in the radiator to the transmission). I tried this and it was easily the hardest task to try to install this on the car without the hose removed. You can't get much force on it and it takes tremendous amount of force to slip the rubber hose (very hard rubber) over the filter connection.

The Magnafine filter I purchased had a 3/8" diameter connection as noted by others that have installed this. I wonder if 5/16" is actually a much better fit. I never got around to trying this.

If you are interested to install this, then it is much better to remove the hose (crows foot on the connection to the transmission, and squeeze the green tab to pull it out from the ATF cooler/radiator) and install it where it would least bend and crimp the hose.

<http://www.volvexc.com/forums/showthread.php?t=11535&highlight=magnafine>

As a note, when I did this, I had to rig up some additional tubes and connections to get it to fit right. I think when I cut this hose prior to taking it off (per directions others provided), it got cut too short. Hence the reason I had to add some additional tubes to extend it. I used this hose with the Magnafine filter on my car and had various shifting problems. I finally removed it, flushed the fluid and the car ran fine after some self adaptation. I wouldn't suggest doing this personally.

There is probably chance for more harm than good unless you know how to take off and cut the hose at just the right place to avoid crimps etc. Just flush the fluid every 30k miles, drain+fill every 15k miles and you will be fine.

## Failing ABS module causing hard downshifts

See [here](#)

## Complex Transmission

Modern automatic transmissions are very complicated. I have found a bunch of info on this AW55-50 transmission. Here are some links for your reference

<http://www.sonnax.com/tech-articles/TASC-TIP-06-08.pdf>

<http://www.sonnax.com/tech-articles/TASC-TIP-07-08.pdf>

<http://www.sonnax.com/tech-articles/TASC-TIP-02-08.pdf>

<http://www.sonnax.com/tech-articles/TASC-TIP-01-09.pdf>

<http://powertrainsavers.com/tech-articles/PRE-ATRA08-RCW.pdf>

<http://powertrainsavers.com/tech-articles/TB-VOL5-NO2.pdf>

<http://pdfdatabase.com/index.php?q=aw+55+50+sn+tech+guide>

<http://avtopedia.ru/akpp/AW55-50 SN.doc>

<http://avtopedia.ru/akpp/AW55-50%20SN%20Transtec.pdf>

<http://www.omegachine.com/html/AW55-51SN-case-repair.html>

Sonnax appears to make valve body rebuild parts for this transmission. It seems likely they know the valve body better than anyone.

Wife says we are Volvo For Life

|                                                                                                                                                         |                       |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|
|  <b>Propeller Shaft Cv Joint Repair, the time has come</b>             | User Name<br>Password | Remember Me? |
| <a href="#">Register</a> <a href="#">FAQ</a> <a href="#">Members List</a> <a href="#">Calendar</a> <a href="#">Today's Posts</a> <a href="#">Search</a> |                       |              |



|                                                                                                                  |                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <a href="#">Thread Tools</a>  | <a href="#">Display Modes</a>  |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|

|                                                                                    |                                                                                                                               |                                                                 |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| #1                                                                                 |                                                                                                                               |                                                                 |
| 06-03-2008, 11:50 PM                                                               |                                                                                                                               |                                                                 |
|  | <a href="#">PaperToast</a> <br>Senior Member | Join Date: Mar 2008<br>Location: Longmont, CO, US<br>Posts: 243 |

 **Propeller Shaft Cv Joint Repair, the time has come**

ok so heres the scoop the prop shaft front cv joint on my xc needs replacing 😞  
i did search the vs forum about this subject but didnt see anyone's results from doing the cv joint repair

ive heard from the guys at swedish motors in boulder CO that they have tried the cv joint repair with not so great results so they just replace the whole shaft.  
however a mechanic friend of mine looked at it and doesnt see why a joint repair wouldnt do it as opposed to replacing the entire shaft

1. what is the general consensus for repairing just the joint?

i did find this [Above All Motorwerks - GENUINE VOLVO Propeller Shaft C/V Joint Front](#)

2. does anyone know anything about this sites reputation?

3. what other sources for this part are out there?

Hailing from the Majestic Rocky Mountain High  
RIP 04-08-09

Extras: Bilstein Hd's, Zimmerman Cross-Drilled Rotors, K&N Air Filter  
IPD HD TCV, Stylin Motors Silicone Hoses, Silverstars, 8000k HID Fogs  
179k

It is illegal to get this high in other states.

Need OEM Volvo Parts?  
Call Daryl Waltrip Volvo  
(800) 689-0021  
Ask for Jamie or Don



#2

06-05-2008, 11:10 AM

[mbsl98](#)  
Senior Member

Join Date: Jan 2006  
Location: Boston  
Posts: 267



I'm sure there has been several posts over on VolvoSpeed.com re: repairing this joint after the boot tears and you loose grease. Even part numbers.

Mike

-----  
'09 XC70 T6  
'07 XC70  
'98 V70M  
'98 S70 T5M  
'95 855T  
'84 MB 380SL



#3

06-05-2008, 02:36 PM

[JRL](#)  
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,058



If the front joint is bad, that would do, but you don't know if it's the front, the middle or the rear joint that's failed, (or all three)!



#4

06-07-2008, 12:56 AM



[PaperToast](#)  
Senior Member

Join Date: Mar 2008  
Location: Longmont, CO, US  
Posts: 243



Quote:

Originally Posted by [JRL](#)

*If the front joint is bad, that would do, but you don't know if it's the front, the middle or the rear joint that's failed, (or all three)!*

we're pretty sure its the front joint ive all but stuck my head next to it and can hear it when i turn the shaft

Hailing from the Majestic Rocky Mountain High  
RIP 04-08-09

Extras: Bilstein Hd's, Zimmerman Cross-Drilled Rotors, K&N Air Filter  
IPD HD TCV, Stylin Motors Silicone Hoses, Silverstars, 8000k HID Fogs  
179k

It is illegal to get this high in other states.

Need OEM Volvo Parts?  
Call Daryl Waltrip Volvo  
(800) 689-0021  
Ask for Jamie or Don



#5

01-05-2009, 12:03 PM



[Rew177](#)  
Junior Member

Join Date: Jan 2009  
Location: Southern NJ  
Posts: 27

#### **Bad CV joints?**

I have a 98 XC70 with a 155k miles. The thing runs and looks great, but when making a sharp turn it makes a grinding noise at the front wheels. It makes this noise when turning left and right sharply.

Now some history: one of the front boots around the cv joint was ripped and I had them all the boots replaced 2 months ago. The grinding noise started about 6 months ago

I'm thinking I need new passenger and drivers side cv joints... and I was going to put in new front axles rather than messing with the cv's.

Has anyone else had a similar problem? Also is there a 3rd cv joint that could possible be bad and I should know about?



#6

01-05-2009, 02:14 PM

[JRL](#)

Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,058



We're all talking about different things here.

Do you mean the **PROPSHAFT?**(driveshaft) That's the big one going down the center of the car, north/south!

Or... do you mean an **AXLE**, the ones that go from the transmission to the front wheels?

They're not called propshafts



#7

01-05-2009, 06:31 PM

[holler1](#)   
Junior Member

Join Date: Jan 2009  
Location: WV  
Posts: 11



I had the front CV joint repaired on my 98 V70 AWD prop shaft (front to rear shaft) at around 100 K using the kit available from one of the parts companies, and it is still going strong at 146 K. If you have a metallic pinging from the area of the console, that is probably the source. Look also for grease thrown up on the body above the joint. Unfortunately, I haven't been able to find the part number (lost two hard drives ago). It cost around \$200 for the kit and another hundred or so in labor by a local non-Volvo garage. Much cheaper than the entire shaft.

This looks like the kit I got, but not sure which part number it is. [http://www.aboveallmotorwerks.com/pr...gon+\(X+Country\)](http://www.aboveallmotorwerks.com/pr...gon+(X+Country))

Before fixing mine, I read that it was important to keep track of where each bolt came out and put them back the same way for balance. However, I forgot to pass that on to the mechanics, and it didn't cause a problem.



#8

01-05-2009, 09:35 PM



[PaperToast](#)   
Senior Member

Join Date: Mar 2008  
Location: Longmont, CO, US  
Posts: 243



the guys at the volvo shop said it is usually best to replace the whole shaft as opposed to replacing just the cv joint.

the reason was that the center bearing can/will go bad eventually and theres no way to fix it.

for around \$350 i got a remaned shaft locally and got it installed by a mechanic friend of mine.

so it should be good for another 150k miles (i hope)

Hailing from the Majestic Rocky Mountain High  
RIP 04-08-09

Extras: Bilstein Hd's, Zimmerman Cross-Drilled Rotors, K&N Air Filter  
IPD HD TCV, Stylin Motors Silicone Hoses, Silverstars, 8000k HID Fogs  
179k

It is illegal to get this high in other states.

Need OEM Volvo Parts?  
Call Daryl Waltrip Volvo  
(800) 689-0021  
Ask for Jamie or Don



#9

01-06-2009, 07:10 PM



[lookforjoe](#)  
Member

Join Date: Oct 2008  
Location: Rockland County, NY  
Posts: 98



I've rebuilt the CV joints. You can also buy a new CV joint from driveshaft doctors.

The center bearing is available, there are two sizes. Don't have the link handy, but you can buy replacements.

I wouldn't buy an entire shaft unless it had more issues than one joint.

---

'98 V70XC/ OVER 300WHP 🏆 / M66 AWD/ Built T5M Motor/ TurboTuner ECU/550cc injectors/ S60R Manifold/ 20g + 3" DP/ FMIC/ Water Injection/ 2.75" intake pipe/ Turbosmart BOV/ Apexi AVC-R /Column 3-pod: AEM AFR meter/ Boost/Pyrometer/ Intake Temp/ IPD Sways/ IPD endlinks/ TME Springs/ 18" Peg replicas/ IPD BBK/ Rear Custom BBK/ EST dual exhaust/ EST H/L's/ SharpHID Hi/Lo&Fogs 4500K/



#10

02-02-2009, 09:29 PM

[MoftheU](#)  
Junior Member

Join Date: Feb 2009  
Location: Baja California Sur  
Posts: 1



#### **Center Bearing**

I have a 2000 XC. While driving in Baja a low decibel growl started in the front of the car. Then one day the growl turned into a metal on metal grind. On inspection by a mechanic it was determined a bearing on the drive shaft had gone bad. I'll call this the center bearing although that may not be the correct name. Anyway, this bearing is inside the engine block. The fix is to buy a new engine block with bearing and swap the guts of my engine into the new block. In other words rebuild the engine. That's way too expensive. Has anyone out there had this problem and found an easier solution. Thanks.



#### **Propeller shaft front CV joint replacement**

The propeller shaft front CV joint is blowing out grease **again** on my 1998V70XC. Three years ago the dealership replaced the entire shaft for the same reason (under warranty) but within 40,000mi it began to leak again. Other posts indicate that the front joint is now available seperately rather than replacing the entire shaft again. If so, has anyone ever replaced it themselves? The front half of the joint appears to be a simple flange mated to the bevel gear flange coupling by bolts. The rear half of the joint is less apparent. Is it splined joint? Any tips would be appreciated.

---

Steven  
2007 XC90 V8

1998 V70XC  
1992 245



#2

07-31-2007, 07:35 PM

[srs](#)

Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150



I spoke to a dealership by telephone who explained that the front CV joint of the propeller shaft can be replaced separately but only if it is the *original* driveshaft. Since I have a replacement shaft, the only way to replace front CV joint is by replacing entire shaft (even though the first replacement was a Volvo shaft??).

There are two possible shafts depending on the bevel gear flange diameter of 92mm vs 95mm. VIN is needed if you do not want to crawl under and measure.

So... my first propeller shaft replacement was under warranty and the second is not. Two for the price of one.

Thanks Volvo!

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#### **Propeller shaft (drive shaft) front CV joint**

My 1998XC propeller shaft (drive shaft) was replaced at 84,000mi under warranty because grease was coming out of the front CV joint. The front CV joint was tight and quiet prior to replacement.

At around 120,000mi I noticed that the replacement shaft had grease coming out the same joint.

Currently it has 140,000mi and the front CV joint is still tight and quiet but still throwing out grease.

Is it typical for failure of the front CV joint to be preceded by loss of lube over such an extended period of time? I am also curious about what symptoms have prompted others to replace their shaft. Is it noise, vibration, looseness, etc? Has anyone ever had an abrupt failure making the car undrivable?

Sorry to beat an old subject to death but 56,000mi seems a little soon to have to replace it again. Volvo wants about \$850 just for the part.

Thanks!!

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#2

02-17-2008, 03:53 PM



**uscgc70**  
Senior Member

Join Date: May 2007  
Location: Kodiak, Alaska  
Posts: 283

you could have ran over something like a stick that got in there and cut the boot, or anything else like that. without grease the joint will fail, it's just a matter of time. they are really not that hard to replace yourself, maybe an hour job, and you can get the part from raxles.com for less than \$200.

---

2003 XC70  
BFG Mud Terrains  
IPD Aluminum Skid plate  
Curt Hitch  
Yakima Basket W/ Spare Tire Mount  
Poly Upper and Lower Motor mounts  
IPD Gauge Rings  
ETC .....



#3

02-21-2008, 06:48 PM



**srs**  
Senior Member

Join Date: Feb 2005  
Location: Michigan  
Posts: 150



Thanks for the reply! Good thought but the boot is in good shape. I realize failure is imminent. I started the thread to gain some insight on how long I might have before failure but, judging by the lack of replies, there are probably too many variables to guess.

It is my understanding that while the front CV joint on an *original* propellar shaft is replacable as a sepearate part, the front CV joint on a *replacement* propellar shaft is not replacable seperately.

Since I started the thread I spoke to Volvo Customer Service at the recommendation of a dealership (different dealership than who installed it) and they are looking into it as a possible defective part. I will post the verdict.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#4

03-10-2008, 07:18 PM



**srs**  
Senior Member

Join Date: Feb 2005  
Location: Michigan  
Posts: 150



I was able to replace the front CV joint rather than entire shaft. The boot was ripped but joint was in decent shape. OEM part was \$200.00. Straight forward job and can be done without removing entire shaft. April 2007 Tech Net Note instructions were very helpful. Most difficult thing was determining which CV joint to use. Volvo Tech Net Note, AWD Service manual and parts schematic all have conflicting information on part #s of joint, washers and bolts. My parts dealership was kind enough to send a couple of different joints.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245

#1

04-04-2006, 06:11 PM



Senior Member

Join Date: Feb 2005  
Location: Michigan  
Posts: 150



#### **Driveline vibration**

Any suggestions on common causes of driveline vibration.

My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). I first noticed it after the propeller shaft was replaced because the "front CV joint of the shaft lost it's lube" but this may be a coincidence. Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range. The dealership that replaced the propeller shaft could not reproduce the vibration because they are not near an expressway. It had a couple other inspections with no obvious problems.

There has been a lot of maintainance since the vibration began including replaced tires, brake rotors/pads, parking brake pads, front struts, outer tie rod ends, spark plugs, lower right and upper motor mounts and it has had two alignments and a trans flush all with no affect.

Any suggestions would be greatly appreciated!  
Thanks.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#2

04-04-2006, 06:18 PM



Junior Member

Join Date: Apr 2006  
Location: Chesapeake, VA, USA  
Posts: 15



I hate to make an uneducated guess, but if I did I would have to say that the prop shaft was not installed correctly. You need to make that service center/dealership reproduce the problem ~ drive them to an expressway! I mean... if the problem started after the prop shaft was replaced, the logical explanation would be that there is something incorrect about the shaft. Maybe it was not balanced properly during installation? Just a guess. Good luck.

Quote:

Originally Posted by **srs**

*Any suggestions on common causes of driveline vibration.*

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). I first noticed it after the propeller shaft was replaced because the "front CV joint of the shaft lost it's lube" but this may be a coincidence. Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range. The dealership that replaced the propeller shaft could not reproduce the vibration because they are not near an expressway. It had a couple other inspections with no obvious problems.*

*There has been a lot of maintainance since the vibration began including replaced tires, brake rotors/pads, parking brake pads, front struts, outer tie rod ends, spark plugs, lower right and upper motor mounts and it has had two alignments and a trans flush all with no affect.*

*Any suggestions would be greatly appreciated!  
Thanks.*

2000 Volvo XC70 AWD SE

[1998 BMW M3 5-Speed Sedan](#)

[1958 Volvo PV 444](#)



#3

04-04-2006, 06:39 PM

**srs**

Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150



I agree but the closest expressway is a one hour drive. Perhaps I will make the half day trek to one of the urban dealerships which are closer to an expressway.

I would think that propeller shaft balance problems would be more constant at all speeds. I was guessing maybe the bevel gear or AWD system might produce my problem.

Steven

2007 XC90 V8

1998 V70XC  
1992 245



#4

04-05-2006, 08:00 AM

[geofmd](#)  
Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5



#### Driveline vibration

I'm having the same problem with my '99 v70 x/c. The same scenario as well. When the front CV joint of the drive shaft went bad there was a hell of a vibration and noise. I'm wondering if the vibration could have damaged the drive shaft. Is it possible to remove the drive shaft and test drive the car to isolate the problem? Has anyone done this?



#5

04-05-2006, 05:03 PM

[srs](#)  
Senior Member

Join Date: Feb 2005  
Location: Michigan  
Posts: 150



In my case the drive shaft, a \$950 part (under extended warranty) was replaced with the 65-70mph vibration occurring afterward. No problems prior. They noticed it incidentally while evaluating a separate problem they were having difficulty diagnosing which eventually turned out to be a broken right motor mount. This was causing a grinding vibration but only with left hand turns. The two vibrations were quite different but I suspect there is a potential relationship. It took a year and multiple visits and failed repairs (like new wheel bearings) before the broken motor mount replacement fixed the left turn vibration. Perhaps it caused the drive shaft problem.

Am I to understand you had a bad vibration/noise, then the front CV on the driveshaft was replaced leading to a problem like I am experiencing? I am not familiar enough with this car to know if the CV joint is integral to the shaft or if it can be replaced separately. I have heard of the driveshaft being removed as a test but I have also heard this may damage the AWD system much like not rotating tires regularly.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#6

04-05-2006, 05:49 PM

[cossie1600](#)  
Senior Member

Join Date: Jan 2006  
Location: CT  
Posts: 147



i have a slight vibration when i let off the gas between 60-40mph too. The vibration is mostly at the steering wheel.

98 XC

04 Z



#7

04-13-2006, 06:27 PM

[hotvolvo](#)

Junior Member

Join Date: Sep 2005

Location: MN

Posts: 7



#### **Driveline vibration worsens**

I have a 98xc with the same condition which has now worsened to vibrating all the time...and pretty annoyingly in town at 30mph. I replaced the rear drive shaft and carrier but that didn't help (thought carrier had excessive play but ? what's excessive). I've replaced brakes rotors and the wheel bearings were all tight. Perhaps it is the front passenger side driveshaft. Anyone else solved this vibration?

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range.*



#8

04-17-2006, 04:08 PM

[moose\\_man](#)

Junior Member

Join Date: Feb 2006

Location: Colorado

Posts: 3



#### **fixed driveline noise and vibration**

I had started a post some time ago about a problem with vibration, and more noticeably at first, noise coming from under my car. The noise was the same as you would get when tapping on the driveshaft with a metal object (ie: the blade of a screwdriver) and sounds like a "pinging" type of noise. At first I thought something was hitting the driveshaft, but I could find no such thing. Finally I took the car to a Volvo shop and they correctly diagnosed the problem as the rear driveshaft itself.

At first I discovered that it would be around \$1000 to replace the rear drivshaft with a new one, so to be sure before I did anything else I removed the driveshaft and gave it a little test drive around the block. The noise and vibration were gone, so I figured that the original diagnoses was correct. Then I searched on the internet for a used driveshaft and after quite a bit of looking and calling I was able to find one for \$275 shipped to my

house. I have since replaced the drivshaft and had no other problems with noise of vibration.

A few notes of interest. I drove the Volvo approximately 4000 miles with this condition and while the vibration did get a little worse it did not seem to cause any other damage. I considered driving without the rear driveshaft, using the front wheels only, but was discouraged from this idea by the shop who had correctly diagnosed the problem. They claim that continued driving without the rear driveshaft in place will damage the rear end. Also, after removing the original rear driveshaft I discovered that the u-joint coupling near the transmisson was bad. Unfortunately it is a sealed deal, connected by a flange to the transmission. No way to replace the u-joint only, so I had to replace the whole shaft. I hope that this helps some folks out there experiencing the same problem. Good luck!



#9

04-17-2006, 05:08 PM

[steve1957](#)

Junior Member

Join Date: Feb 2006

Location: toronto

Posts: 11



Quote:

Originally Posted by **hotvolvo**

*I have a 98xc with the same condition which has now worsened to vibrating all the time...and pretty anoyingly in town at 30mph. I replaced the rear drive shaft and carrier but that didn't help (thought carrier had excessive play but ? what's excessive). I've replaced brakes rotors and the wheel bearings were all tight. Perhaps it is the front passenger side driveshaft. Anyone else solved this vibration?*

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range.*

All, I have a 2001 xcv70. I am always experiancing bad vibration....I take off the rear wheels, clean all the stuck mud from inside the rims. big chunks gather inside after driving on a wet gravel road..... This causes a lot of serious imbalance and bad vibration. Very poor designed alloy rims I must say.

StevePv5441957



#10

04-22-2006, 06:48 PM

[hotvolvo](#)

Junior Member

Join Date: Sep 2005

Location: MN

Posts: 7



**Driveshaft Carrier Bearing and VC**

First I replaced a broken right (passenger) motor mount. It helped by eliminating motor movement that I hadn't really noticed before (makes the engine smoother-at least in the engine bay). I also replaced the viscous coupling to eliminate the pinging/snapping sounds. And, I replaced the driveshaft with a used one...which lasted about 5,000 miles and needs to be replaced again due to the vibration it is causing. I believe it is the carrier bearing that is worn. I have started to also get the pinging back from the new VC just like it started before. I removed the driveshaft and drove a couple miles out of town to take it up to speed. Vibration is gone with the driveshaft as is the VC pinging (since it is no longer operational without the driveshaft). I plan to drive it without the rear driveshaft until I can save \$2000 for a new VC and driveshaft. We'll see if it breaks anything in the tranny without the rear driveshaft installed.

05-10-2006, 07:52 AM

[Mk1Racer](#)

Junior Member

Join Date: Jul 2005

Location: NJ

Posts: 21



I've recently noticed a vibration that's developed in my '98 V70 XC. I replaced the p/s motor mount, both control arms, and both front struts. I get a shudder when I am almost stopped, and again, when I pull away. It seems to be much worse when making tight turns, more so only l/h than r/h turns. I'm wondering if it's the p/s drive shafter or outer CV joint, or could it possibly be the angle gear? I don't have a vibration at speed.



#12

05-15-2006, 11:06 AM



[bugjar](#)

Junior Member

Join Date: Feb 2006

Location: detroit Metropolitan area

Posts: 20



**same problems driveshaft vibration/ give**

I took my car into a local all purpose service place brakes,oil, tires, etc. Because my car is experiencing the same problems, i.e. driveline vibration as I let off the gas in 4th gear a heavy shudder thoroughout. I was told there is excessive play in the driveshaft, which is not good obviously, is it imperative I get car to my independent immediately or do I have a little time? Also does anyone have an idea where I could find the parts I need for cheaper (haven't had it diagnosed by indy yet but guessing propeller/ front or rear driveshaft.)



#13

05-15-2006, 07:13 PM

[srs](#)

Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150



**Parts**

For OEM parts, I have had good luck with Beechmont Volvo in Cincinnati, OH, 1-800-255-3601.

The give a 20% discount (possibly only for VCOA members) and never any shipping charges. I have ordered large items like a driveshaft for a 240 which had to be sent from Sweden and also once a windshield and still no shipping charges. Most of the parts guys/gals are very helpful. Local dealerships will often discount the parts also but there are none near me. I live in rural Northern MI and parts arrive in two days, three days if they have to special order it.  
I hope this is helpful.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#14

08-02-2006, 01:09 PM

[geofmd](#)   
Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5

#### **Driveline vibration**

My '99 XC is back in the shop for driveline vibration. It all started with a vibration/pinging ratcheting sound that turned out to be a bad viscous coupling at the front of the drive shaft. (Rubber grease seals failed leading to failure of the coupling). If yours hasn't failed yet check for grease expelled from this coupling before it's too late. Anyway, after the VC was replaced, I noticed there is still a vibration at around 65mph. Volvo shop is now looking into the possibility that the shop that replaced the VC did it wrong. Apparently, one of the bolts that mounts the VC is longer than the others and needs to be put back in the same hole it came out of for proper balance. We shall see how this goes.



#15

08-31-2006, 06:24 AM

[geofmd](#)   
Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5

#### **Drive shaft vibration**

My front CV joint went bad on my driveshaft causing a bad vibration and ping and ratcheting sound. I had the CV joint replaced at an independent shop because there is no close by Volvo dealer. For the most part that fixed the problem but there remained some vibration at 60-70 mph. It turns out that when the drive shaft is removed you need to replace every mounting bolt in the exact place it came from. On mine, one bolt at the rear of the driveshaft is longer than the others for balancing purposes. This bolt was reinstalled in the wrong position and caused the vibration. There is no easy way of identifying the proper place for the balance bolt. Anyway I had the balance bolt replaced with a standard bolt and the vibration went away. I guess the drive shaft is not perfectly balanced now but it's not noticeable to me.

10-22-2009, 09:21 AM

[krazzz](#) 

Junior Member

Join Date: May 2009  
Location: Ludington, MI  
Posts: 20



**Bevel gear noise and now a clunk when stopping?? Help, I am 500 miles from home!!**



Hi guys, I'm really in a bind on this one. Due to an unexpected death in the family I had to hop in the car and make a 500 mile trip to my hometown without bringing any of my tools along. This is my wife's car and I haven't driven it in a while. On the way I noticed a bit of a "drivetrain whine" around 65 mph and it seemed more noticeable while coasting or decelerating. I'm not sure if I am being paranoid because of all the things I have read on the bevel gear or if it is really starting to go. Now today my wife ran to the store about 2 miles away and said the car is making a loud thud/clunking noise when she stops. I took the car around the block and sure enough there was a very pronounced thud/clunk when I stopped. It seemed to happen around 5 mph when I was nearing a complete stop. The harder I stop the louder it is. If I did an excruciatingly slow stop it didn't do it. The noise is not coming from the brakes but rather the drivetrain. I can feel it my seat and it seems to be coming from just behind me. Is this due to the bevel gear or maybe an transmission mount or something. I don't think it is a u-joint because it seems too loud for that and it doesn't make any noise while accelerating. I will be going over to my dad's house soon to use his garage.

I really appreciate everyone's responses and could really use the help. If someone is intimately knowledgeable about this I wouldn't mind a phone call to throw some ideas around. My cell is 231-233-3653. The funeral is on Sat so my only time to work on the car is today and tomorrow.

Thank you!!

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 



#2

 10-22-2009, 09:46 AM

[forbinnie](#) 

Junior Member

Join Date: Dec 2006  
Location: Leeds AL  
Posts: 19



I guess you have already checked the upper engine stabilizer rubber bush? When it finally give out it can give symptoms of clunking.



#3

 10-22-2009, 10:22 AM

[krazzz](#)   
Junior Member

Join Date: May 2009  
Location: Ludington, MI  
Posts: 20



Quote:

Originally Posted by **forbinnie** 

*I guess you have already checked the upper engine stabilizer rubber bush? When it finely give out it can give symptoms of clunking.*

I haven't checked that but I will. I am going to give the whole car a "once over." I really felt it coming from under the car but it is possible that it came from the engine compartment. Stranger things have happened. Wouldn't that also clunk under acceleration too?

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 



#4

 10-22-2009, 02:04 PM

[BillR](#)   
Junior Member

Join Date: May 2008  
Location: nr Winnipeg, Manitoba, Canada  
Posts: 15



There a center hanger bearing on these cars. It might have gone and the sound you're hearing is the drive shaft coming to rest as you stop.

I had one go on my old 140, and it thumped around a bit but didn't leave me stranded.

I hope it's as simple as this.

Bill



#5

 10-22-2009, 02:58 PM

[krazzz](#)   
Junior Member

Join Date: May 2009  
Location: Ludington, MI  
Posts: 20



#### Update

I looked at the upper engine mount/torque strut and found that it is starting to go. It is cracked most of the way through but not all the way. Could this worn bushing cause the drivetrain to get out of whack far enough to cause a clunk under the car? I ordered the rubber bushing and it will be in tomorrow. I did a little more testing and here are my results:

When I start driving and get about 20 mph I hear a whirring/whine type of noise. This noise persists as speed increases until I can no longer hear it due to road/engine noise. When I slow back down to about 15 mph it makes a major clunk and then it is fine and the whirring/whine noise stops at the same time. This clunk is bad and it is the kind that makes you cringe. I tested using the brakes to slow and also coasting to a stop and the results are the same. I can do hard acceleration without any noises other than described above. It doesn't matter if I increase speed rapidly or slowly. I also kept it in first gear and tested it that way to see if it had anything to do with the transmission shifting and it did not. I took a look at the driveshaft and it seemed to be ok however I'm not sure what to look for on a bad one. The U-joints were tight and there was only a little play moving it front to back. Here are the conclusions I have made thus far:

1. It is not the transmission, keeping it in 1st gear didn't change the noise.
2. It is not the brakes, coasting has the same results.
3. It is speed related and not engine/transmission rpm related.
3. Acceleration either slow or fast doesn't change anything.
5. Cornering doesn't change anything.

So does this help anybody? Does it sound familiar?

Can I easily disable the AWD so that I can at least make it home?

What should I try next?

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 🤔👍



#6  
10-22-2009, 03:48 PM



JRL  
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,054



When I start driving and get about 20 mph I hear a whirring/whine type of noise. This noise persists as speed increases until I can no longer hear it due to road/engine noise. When I slow back down to about 15 mph it makes a major clunk and then it is fine and the whirring/whine noise stops at the same time.

### **COULD BE THE VISCOUS COUPLING IS GOING (OR THE BEVEL GEAR)**

This clunk is bad and it is the kind that makes you cringe. I tested using the brakes to slow and also coasting to a stop and the results are the same. I can do hard acceleration without any noises other than described above. It doesn't matter if I increase speed rapidly or slowly. I also kept it in first gear and tested it that way to see if it had anything to do with the transmission shifting and it did not. I took a look at the driveshaft and it seemed to be ok however I'm not sure what to look for on a bad one. The U-joints were tight and there was only a little play moving it front to

back. Here are the conclusions I have made thus far:

**A CRACKED TORQUE MOUNT WOULD NOT MAKE THIS NOISE, BESIDES THE WHINE IS MECHANICAL.  
ALSO POSSIBLE WHEEL BEARING?**



#7  
10-22-2009, 04:20 PM

[krazzz](#)  
Junior Member

Join Date: May 2009  
Location: Ludington, MI  
Posts: 20

Quote:

Originally Posted by **JRL**

*When I start driving and get about 20 mph I hear a whirring/whine type of noise. This noise persists as speed increases until I can no longer hear it due to road/engine noise. When I slow back down to about 15 mph it makes a major clunk and then it is fine and the whirring/whine noise stops at the same time.*

**COULD BE THE VISCOUS COUPLING IS GOING (OR THE BEVEL GEAR)**

*This clunk is bad and it is the kind that makes you cringe. I tested using the brakes to slow and also coasting to a stop and the results are the same. I can do hard acceleration without any noises other than described above. It doesn't matter if I increase speed rapidly or slowly. I also kept it in first gear and tested it that way to see if it had anything to do with the transmission shifting and it did not. I took a look at the driveshaft and it seemed to be ok however I'm not sure what to look for on a bad one. The U-joints were tight and there was only a little play moving it front to back. Here are the conclusions I have made thus far:*

**A CRACKED TORQUE MOUNT WOULD NOT MAKE THIS NOISE, BESIDES THE WHINE IS MECHANICAL.  
ALSO POSSIBLE WHEEL BEARING?**

I suspect that the bevel gear might be going but does that explain the clunk? I could drive the car from a stop to highway speeds and back down to a stop and it will only clunk one time and it is always around 15 mph when decelerating.

I realize the whine is mechanical. I guess what I was thinking is that it might be possible for the mount to cause the engine to flex more than usual thus causing the drivetrain to get out of its normal alignment causing the clunk.

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09.



#8

10-22-2009, 07:09 PM

[krazzz](#) 

Junior Member

Join Date: May 2009  
Location: Ludington, MI  
Posts: 20



#### Plan B?

Lets just assume it is the bevel gear. What can be done so that I can make the 500 mile trip back home? Can I just remove the whole bevel gear housing? Can I leave the driveshafts in place? I am only going to have basic hand tools like wrenches and a socket set at my dads house.

Basically, what do I need to do to get this thing home without causing anymore damage?

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 



#9

10-23-2009, 05:10 AM

[JRL](#) 

Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,054



Unfortunately no



#10

10-23-2009, 06:28 AM

[BillR](#) 

Junior Member

Join Date: May 2008  
Location: nr Winnipeg, Manitoba, Canada  
Posts: 15



How about just removing the driveshaft? I don't know if you'd need special tools for that.

Make sure that you mark the orientation of the shaft before you take it off so that you can put it back on the same way. When I had my bevel gear lubricated a couple of years ago they put the shaft back on 180 degrees out and it vibrated quite badly.

I hope you can resolve this for your trip home.

Bill

10-23-2009, 07:59 AM

[krazzz](#) 

Junior Member

Join Date: May 2009

Location: Ludington, MI

Posts: 20



I was hoping that I could just pull the driveshaft. I haven't had anybody say that yes this will work and it wont further any damage. I just want to get it home and then I can look into it in more detail.

---

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 



#12

10-23-2009, 09:27 AM

[BillR](#) 

Junior Member

Join Date: May 2008

Location: nr Winnipeg, Manitoba, Canada

Posts: 15



There have been a lot of people who've "converted" their XCs to front drive only. Perhaps a search of this forum will give you some specifics on the process. I believe that they've just pulled the drive shafts, but I've never looked into it.

If the bevel gear had destroyed itself, they may have also taken the casing off and removed parts from inside as well, just to make sure that there's no bits of metal rattling around in the bottom of the transmission.

Try pulling the shaft and see if the nasty clunk goes away. At the very least you'll be taking all of the strain off of the bevel gears, which should allow you to get home. 

Good luck.

Bill



#13

10-26-2009, 09:30 AM

[krazzz](#) 

Junior Member

Join Date: May 2009

Location: Ludington, MI

Posts: 20



#### Update

I replaced the bushing on the top engine mount (torque strut) and it made the clunk about 50% quieter. I didn't mess with the car anymore since I wanted to spend time with family. I ended up leaving the car there and borrowing one of my dads cars to get back to PA. I will just replace the bevel gear when I am home for Thanksgiving. I am also going to replace the right front cv joint/axle because I noticed the boot is torn and the car has 140k so it doesn't make much sense to repair it. And no, the CV joint is not the cause of the clunk, it is still in good shape. I will keep you guys

posted and will let you know.

Thanks!

Chris Knudsen

1998 XC70 141k, first Volvo, bought 5/09. 🙌



#14

10-29-2009, 03:48 PM

[wcbxc2000](#)

Junior Member

Join Date: Jun 2009

Location: Chicago

Posts: 9

#### **Bevel Gear/Bearing**

Can just relay what I have recently gone thru...had same whining sound (without clunking) when accelerating/decelerating...took to dealer in my hometown (unfortunately didnt have access to my mechanic in the city) and they claimed bevel gear issue and replaced it---for an obscene amount of money. Drove it off the lot and when i finally paid attention there was a much softer whining and only to about 50mph...but then as you mentioned i think road noise drowns it out. took to my mechanic i usually go to and he said he had just replaced the bearing on another xc (30 dollar part but attached to a much bigger more expensive part) and so now he is going to replace that for about 1200 bucks. He nailed it too when he asked if it sounded like it was coming from the right front of the car and it is actually a piece in the center. So will be getting replaced in a couple of weeks. I mention this because it seemed both problems (bevel and bearing) had the same symptom but to differing degrees. I think JRL mentioned bearing in his responses as well.

my 2¢.



#15

10-30-2009, 04:55 PM

[Space](#)

Junior Member

Join Date: Oct 2009

Location: Virginia

Posts: 14



My car started doing this exact same thing 2 days ago. It sounds like the drive train is going to be left in the road. It is worse when slowing to turn and picking up the throttle again. At the same time the trans started puking fluid. A local Volvo/Saab specialty shop suggested the torque converter seal as the cause of the leak. A \$30 part with a \$1400 repair bill.

Hopefully the noise will be tracked down to a bearing, but not with my luck.

Suggestions? :ears:

*Last edited by Space; 10-30-2009 at 05:31 PM.*



#16

10-31-2009, 03:09 PM

[Space](#) 

Junior Member

Join Date: Oct 2009

Location: Virginia

Posts: 14



tore it down a little this morning and found what I am sure is nothing new to most of you.

Trans fluid is now pouring from the torque converter housing. I am assuming it is the seals.

Removed the drive shaft and all banging and vibration is gone. One of the CV joints is shot and the carrier bearing has a lot of play in the dampening material. Normal?

Now to see if the CV's are serviceable?



04-05-2008, 01:10 PM

[JRL](#) 

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,060



Yeah, I know..... Volvo. 😞

They can't just call it what it is, a friggen **DRIVESHAFT**.

Anyhow, they don't go out of balance, **they go BAD**.

They have 3 joints and only one is servicable, the front one.

There is someone who actually took the center joint out and apart and fixed it, but unless you have a machinist's talent you probably need a new one. \$1000, plus or minus!

...and it will get worse and become un-drivable, sorry

## [AWD issues - Diagnosing bad propshaft in xc70](#)

[Post a reply](#)

16 posts • [Page 1 of 2](#) • [12](#)



### [AWD issues - Diagnosing bad propshaft in xc70](#)

by [WeAre06](#) » 23 Oct 2009, 21:48

1998 XC70 (165k)

I have a shuddering/bumping noise coming from the front end during tight turns. The front axles, spring seats, sway bar links, shocks, 2 motor mounts and one control arm have all been replaced recently by a dealer in a futile effort to eliminate the noise. In a

different post JRL said my situation was classic bad propshaft. Is there any way to confirm a bad propshaft while it's still on the car or even once it's off? I was under the car today looking at the thing, but I just don't know what to look for. I did however notice some oil residue on the bottom of the bevel gear case indicating some leakage. Could a bad bevel gear be causing the bumping noise during tight turns?

If my problem just ends up being the propshaft, I will replace it. If it's one of the other AWD components I will convert to FWD

Black 1998 V70XC 172k+



[WeAre06](#)

Member



Posts: 67

Joined: 19 Oct 2009, 08:32

Location: Philadelphia, PA

Model, Year: V70XC 1998

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [holler1](#) » 24 Oct 2009, 09:20

In my case, the front CV joint on the AWD prop shaft failed. However, it made a metallic pinging noise that seemed to come from under the console area, not a grind or clunk from the front. This joint seems to fail a lot and it is right at the back of the bevel gear. Mine threw a lot of grease onto the bottom of the car and I could see that it was misaligned; also it flexed when I pushed it. This CV joint can be replaced. I think any other propshaft problem would cause noise farther back. You might want to try just pushing up and down on the propshaft at various points to see if it is loose.

I'm not familiar with what a bad bevel gear sounds like.

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1

Previous: 1982 Volvo DL (240) 160000

1998 Tacoma, Fords (5), Dodge, Montero,

GTO, Sunbeam Alpine, VW Dasher

---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

[Top](#)

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [WeAre06](#) » 24 Oct 2009, 10:14

Was under the car a few minutes ago inspecting the propshaft and found the noise maker or at least something wrong. The universals looked fine aside from some rust and had no play, however the center carrier bearing was disintegrated. I guessing the at one point the carrier bearing consisted of outer metal housing, inner rubber dampener, bearing, then driveshaft. Anyway, my rubber dampener is totally disconnected from the outer metal housing and drive shaft is just flopping around in there.

ATTACHMENTS



*Bad Propshaft Center Bearing. It was hard to get a good pic, but if you look closely you see the rubber dampener is broken.*

Black 1998 V70XC 172k+



[WeAre06](#)

Member



Posts: 67

Joined: 19 Oct 2009, 08:32

Location: Philadelphia, PA

Model, Year: V70XC 1998

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [WeAre06](#) » 24 Oct 2009, 10:23

holler1

Did you end up replacing your driveshaft or just make in FWD?

Black 1998 V70XC 172k+



[WeAre06](#)

Member



Posts: 67

Joined: 19 Oct 2009, 08:32

Location: Philadelphia, PA

Model, Year: V70XC 1998

•

[Top](#)

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [holler1](#) » 25 Oct 2009, 05:32

I was able to get the front CV joint fixed with a kit. It has been fine for several years. I need the AWD for a couple of months every year so was reluctant to go to FWD.

If I can get on my other computer I may have a photo of the "normal" center bearing. I busted the LCD screen on my computer and have to rig it up with another screen.

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge  
2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1  
Previous: 1982 Volvo DL (240) 160000  
1998 Tacoma, Fords (5), Dodge, Montero,  
GTO, Sunbeam Alpine, VW Dasher  
---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [WeAre06](#) » 08 Nov 2009, 20:43

Removed my drive tonight and the bumping sound that haunted me for 2 yrs is gone. The rubber dampener on the center bearing was totally busted. Taking my time, the job took 2 hours. The only trick was you had to have a front and back tire off the ground at the same time so you can put the car in neutral and spin the drive shaft allowing access to all the bolts.

So I'm FWD drive for now and maybe forever...

Black 1998 V70XC 172k+



[WeAre06](#)

Member



Posts: 67

Joined: 19 Oct 2009, 08:32

Location: Philadelphia, PA

Model, Year: V70XC 1998

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [ajwgator](#) » 08 Nov 2009, 21:03

**WeAre06 wrote:** So I'm FWD drive for now and maybe forever...

WeAre06, I was just about to reply that the center carrier mount was definitely causing your problem when you posted that you removed your driveshaft and found it out for yourself. I just went through this with my 98 V70XC AWD too. I didn't settle for leaving it out and wasn't going to pay 1,100–1,400 at the Volvo dealer for a new one. The dealer will tell you that it cannot be fixed but I'm sure you know from reading here it can be.

I got a rebuilt one from Colorado

Driveshaft [www.coloradodriveshaft.com](http://www.coloradodriveshaft.com) They are really great and make it pretty easy getting a replacement. They pay all the shipping both ways, and in the end you are only out \$475 or so. Call them in the morning.



*1998-99 Volvo rear drive shaft*

Good luck.



[ajwgator](#)

Member



Posts: 27

Joined: 27 Oct 2009, 08:38

Location: Lexington KY

Model, Year: V70XC AWD 1998

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [commlend](#) » 08 Nov 2009, 21:49

Glad to hear weare06 was able to resolve his issue. I removed mine @ 170K. Does anyone have any insight on why these driveshafts are supposedly superior to standard driveshafts with u-joints? Replaced a u-joint on my yukon- \$17.00. Replace volvo shaft = \$475 on the low end??

Thats roughly 25 u-joints. 😊 Seems a little over-engineered for a limited slip differential.

Love the volvo though- she's a keeper...



[commlend](#)

Member



Posts: 32

Joined: 17 Mar 2009, 18:27

Location: Massachussetts

Model, Year: 99 70xc

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [WeAre06](#) » 14 Nov 2009, 18:38

Update

I been driving with out the driveshaft for a week now and the car seems... FASTER. All that AWD gear was holding the thing back. On wet roads, I can spin the front wheels like crazy though. Despite the new found quickness I order a new driveshaft from colorado driveshaft. I want the AWD for winter.

Black 1998 V70XC 172k+



[WeAre06](#)

Member



Posts: 67

Joined: 19 Oct 2009, 08:32

Location: Philadelphia, PA

Model, Year: V70XC 1998

[Top](#)

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [ajwgator](#) » 15 Nov 2009, 18:30

Good move! You will be very please with Colorado Driveshaft's great rebuilds and top notch service. 😊



[ajwgator](#)

Member



Posts: 27

Joined: 27 Oct 2009, 08:38

Location: Lexington KY

Model, Year: V70XC AWD 1998

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [rico2001](#) » 12 Jul 2010, 19:48

Would it be a bad propshaft if the car is not moving? My mother 98 awd, has a vibration/rumble from (seems to be) under the center console. I've changed driver-side front cv axle, changed front bevel gear oil, and power steering fluid, Reason for the ps fluid b/c seems to be concentrated at the rack or bevel gear, but I can't determine which. I've read all the thread regarding removing the drive axle. Before I do so, since I can't think of what else to do, just wondering are people getting the noise/vibration/rumble with the car is in park.



[rico2001](#)

Posts: 4

Joined: 12 Jul 2010, 19:39

Location: Charlotte

Model, Year: 1997

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [Kuhnman](#) » 12 Jul 2010, 21:38

I talked to A Volvo Specialist and he said there is a chance of the coupler between the tranny and bevel gear assembly rusting and wearing badly enough that the drive splines will strip out causing the car to loose all drive to the axles. If anyone has AWD in their V70, it is a good idea to remove the bevel gear and clean and lube this coupler around the 200000 km mark to prevent this. This coupler is just between the housings so it isn't in any fluid. Also, this Volvo guy believes (and so do I), the front CV joint on the driveshaft fails because of the high heat hardening the rubber grease boot in the joint causing it to crack and come apart. This happened to my car and found you can buy just the front joint. It is splined to the shaft and held on with a snap ring. I plan to pull out my bevel drive soon to do a re-seal and clean up that coupler. I also need to replace my front right CV shaft due to a shake around corners. If I find anything out of the ordinary that might help anyone diagnose their car, I will mention it. I would check the tranny fluid condition too. Check for proper level, color and smell in case it is burnt which can be a sign of tranny failure causing the car to not move and make noise. Hope this helps a bit!



[Kuhnman](#)

New Member



Posts: 6

Joined: 12 Jul 2010, 21:15

Location: Chilliwack B.C. Canada

Model, Year: 1998 V70 AWD

## Re: AWD issues - Diagnosing bad propshaft in xc70

by [rico2001](#) » 18 Jul 2010, 09:48

So does anyone know if a bevel gear would be bad if the car is in park and you have vibrations seemingly coming from center console? I've changed bevel gear oil, replaced passenger side cv and top motor mount. Still have a trac/abs light on. Going to replace the module (with rebuilt) next. Have not tried removing the drive shaft since, since I don't think it's the issue since car is not moving.



[rico2001](#)

Posts: 4

Joined: 12 Jul 2010, 19:39

Location: Charlotte

Model, Year: 1997

## Re: AWD issues - Diagnosing bad propshaft in xc70

by [ecbsykes](#) » 18 Jul 2010, 11:13

**rico2001 wrote:**

So does anyone know if a bevel gear would be bad if the car is in park and you have vibrations seemingly coming from center console? I've changed bevel gear oil, replaced passenger side cv and top motor mount. Still have a trac/abs light on. Going to replace the module (with rebuilt) next. Have not tried removing the drive shaft since, since I don't think it's the issue since car is not moving.

If the car isn't moving and you have vibrations, you can pretty much rule out almost all the drive train including the AWD. Maybe time to inspect your engine mounts?

The ABS/TRACS light is probably your ABS module being dead. Rebuild it for cheap here: <http://www.modulemaster.com/en/index.php>

**Ed Sykes**

2000 V70XC 2.4L Turbo – Emerald Green –145,000 miles

Lubro-Moly 5W-40 Full Synthetic – Made In Germany!

United States Air Force ROTC

Northern Arizona University

\*\*\*Gone to AFROTC Field Training July 31 – August 28\*\*\*

# **AWD issues - Diagnosing bad propshaft in xc70**

[Post a reply](#)

16 posts • [Page 2 of 2](#) • 12

## **Re: AWD issues - Diagnosing bad propshaft in xc70**

by [rico2001](#) » 18 Jul 2010, 11:39

ecbsykes wrote:

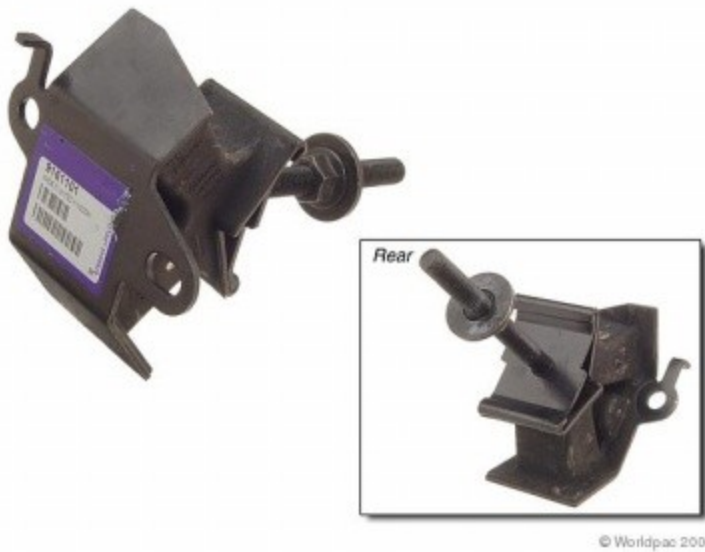
rico2001 wrote: So does anyone know if a bevel gear would be bad if the car is in park and you have vibrations seemingly coming from center console? I've changed bevel gear oil, replaced passenger side cv and top motor mount. Still have a trac/abs light on. Going to replace the module (with rebuilt) next. Have not tried removing the drive shaft since, since I don't think it's the issue since car is not moving.

If the car isn't moving and you have vibrations, you can pretty much rule out almost all the drive train including the AWD. Maybe time to inspect your engine mounts?

The ABS/TRACS light is probably your ABS module being dead. Rebuild it for cheap here: <http://www.modulemaster.com/en/index.php>

Thanks for the reply, I guess I can leave the drive train and look elsewhere.

Check all the mounts I could see (find) and the only one that looked bad was the top mount, which I replaced. According to fcp & europarts, the 98 V70 AWD has this type of lower read engine mount. I'm having trouble locating it and it's the only one I haven't inspected yet.



Anyone have any pic or replacement procedure for the mount on 98–2000 AWD?

I may need to post a new thread since I'm getting off topic with the engine mounts.



[rico2001](#)

Posts: 4

Joined: 12 Jul 2010, 19:39

Location: Charlotte

Model, Year: 1997

### [Re: AWD issues - Diagnosing bad propshaft in xc70](#)

by [holler1](#) » 18 Jul 2010, 18:04

Also, this Volvo guy believes (and so do I), the front CV joint on the driveshaft fails because of the high heat hardening the rubber grease boot in the joint causing it to crack and come apart. This happened to my car and found you can buy just the front joint. It is splined to the shaft and held on with a snap ring.

I agree with the Volvo tech that the front CV joint is a weak point due to heat from the exhaust. I replaced the front CV

joint once, and it failed again after 3 years or so. The second time, in 2009, I got a rebuilt shaft from Colorado Driveshaft.

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1

Previous: 1982 Volvo DL (240) 160000

1998 Tacoma, Fords (5), Dodge, Montero,

GTO, Sunbeam Alpine, VW Dasher

---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

## [Damage transfer case / Bevel Gear](#)

[Post a reply](#)

10 posts • Page 1 of 1

### [Damage transfer case / Bevel Gear](#)

by [GABOVILLARREAL](#) » 26 Mar 2010, 23:48

I'm a new volvo owner I bough back in November a 2000 XC70 awd which I'm in love with 105k miles.

I did the timing belt and was fine. But a week later I started to hear a noise that I though that it was a bearing , but sudenly the car broke down with making a mettalic crunching sound. I'm not a mechanich expert so I took it to a friend of mine we lifted it to check it and seems like is what they called the transfer case (in the forum seems like its also call Bevel Gear).

I know that i can disconnect the drive shaft and convert the car FWD but I would like to keep it awd.

What can suggest me? Where Can I get a new Bevel Gear?



[GABOVILLARREAL](#)

New Member



Posts: 5

Joined: 04 Jan 2010, 08:39

Location: MIAMI FL USA

Model, Year: V70 XC AWD SE 2000

[Top](#)

### [Re: Damage transfer case / Bevel Gear](#)

by [jablackburn](#) » 26 Mar 2010, 23:53

A brand-new one is ridiculously expensive. There is a link for Erie Volvo at the top of the page, who specializes in selling used, good Volvo parts. I'd give them a call and ask what one runs for. Hopefully your driveshaft is still OK, if not you may have to have that rebuilt or get a used one too. Once you get it, change the bevel gear fluid every 50K miles and take care of the tranny, and you should (hopefully) be good for a while to go.

There's a link floating around somewhere for the bevel gear fluid change on an XC. I can't find it at the moment, but I'll look again tomorrow.



'98 S70 T5 175K miles – K&N filter, IPD HD TCV, Mobil-1

*"You may not end up where you thought you'd be, but you always end up where you're meant to be."*



[jablackburn](#)

MVS Moderator



Posts: 3649

Joined: 08 Jun 2008, 14:54

Location: Blacksburg, VA

Model, Year: '98 S70 T5

### [Re: Damage transfer case / Bevel Gear](#)

by [GABOVILLARREAL](#) » 05 Apr 2010, 08:33

Thanks, for your help.

I've been shopping around and this part is way too expensive. Anything from \$950 up to \$1450 used.

Seems like they messed on 2000 models 1999 and 2001 are different

I'm thinking to turn it into FWD I saw a couple of post about it.

Any suggestion will be welcome.



[GABOVILLARREAL](#)

New Member



Posts: 5

Joined: 04 Jan 2010, 08:39

Location: MIAMI FL USA

Model, Year: V70 XC AWD SE 2000

### [Re: Damage transfer case / Bevel Gear](#)

by [ecbsykes](#) » 05 Apr 2010, 09:15

I turned my 2000 V70XC into FWD when I had that problem. I live half the year in a place that gets a lot of snow, and I was still surprised at how superbly the XC handled on snow and ice with only FWD. Unless you've got the cash, I don't think it's worth it to try and keep it.

**Ed Sykes**

2000 V70XC 2.4L Turbo – **Emerald Green** –145,000 miles

**Lubro-Moly** 5W-40 Full Synthetic – Made **In Germany!**

**United States Air Force** ROTC

Northern Arizona University

**\*\*\*Gone to AFROTC Field Training July 31 – August 28\*\*\***



[ecbsykes](#)

Senior Member



Posts: 762

Joined: 08 Mar 2009, 14:43

Location: San Diego/Flagstaff

Model, Year: 2000 V70XC

### [Re: Damage transfer case / Bevel Gear](#)

by [GABOVILLARREAL](#) » 07 Apr 2010, 12:29

By any chance do you know what it takes to turn it into FWD?



[GABOVILLARREAL](#)

New Member



Posts: 5

Joined: 04 Jan 2010, 08:39

Location: MIAMI FL USA

Model, Year: V70 XC AWD SE 2000

### [Re: Damage transfer case / Bevel Gear](#)

by [Ozark Lee](#) » 07 Apr 2010, 17:36

By any chance do you know what it takes to turn it into FWD?

Remove the drive shaft to the rear.

...Lee

'94 850 N/A

'96 850 N/A

'96 Platinum Edition Turbo

'98 S70 T5

Previous: 1989 740 GLT

1986 740 GLT

1972 142 Grand Luxe



[Ozark Lee](#)

MVS Moderator



Posts: 6768

Joined: 07 Sep 2006, 07:24

Location: USA Midwest

### [Re: Damage transfer case / Bevel Gear](#)

by [jwaldschmidt](#) » 12 Jun 2010, 15:03

I am new to the world of Volvo. I had a whine along with a clunk, which occurred intermittently during deceleration. I believed the "clunk" problem to be what I call the carrier bearing in the rear drive shaft. Since the discovery, I have removed the rear drive shaft, and I still have the whine, but no "clunk", that occurs from the front, possibly the transmission area. I am reading that other owners are having problems with their angle gear (transfer case). Any ideas what to check next, I am looking to fix it myself. Pictures or diagrams would be great.

Thanks for any advice.



[jwaldschmidt](#)

Posts: 2

Joined: 12 Jun 2010, 14:53

Location: Colorado

Model, Year: 2000 V70 XC AWD

## [Re: Damage transfer case / Bevel Gear](#)

by [JRL](#) » 12 Jun 2010, 16:17

**GABOVILLARREAL wrote:** Thanks, for your help.

I've been shopping around and this part is way too expensive. Anything from \$950 up to \$1450 used. Seems like they messed on 2000 models 1999 and 2001 are different I'm thinking to turn it into FWD I saw a couple of post about it. Any suggestion will be welcome.

You should be able to buy it from Erie for 5-\$600 TOPS (I'm a dealer and bought one from them for \$400 last year)

98, late 98 thru all of the 99s and then 2000. all are different

If it's making noise it STILL will make noise unless that too is removed, then you need to make a block off plate.

1999 V70 T5M 1 of 20 White (almost finished)

2000 V70R Black 88K miles (Wife's)]

2000 V70R Silver, 28,000 miles!!! **LIFETIME KEEPER**

1998 S70T5M Tropic Green, unreal, for sale soon



[JRL](#)

Senior Member



Posts: 3458

Joined: 22 Nov 2005, 14:07

## [Re: Damage transfer case / Bevel Gear](#)

by [jwaldschmidt](#) » 12 Jun 2010, 20:18

So would you say that I need to remove the angle gear? What tricks do I need to know before jumping into it? Can I purchase the block off plate or build? gaskets?

Appreciate the help.



[jwaldschmidt](#)

Posts: 2

Joined: 12 Jun 2010, 14:53

Location: Colorado

Model, Year: 2000 V70 XC AWD

### [Re: Damage transfer case / Bevel Gear](#)

by [yoziyo](#) » 13 Jun 2010, 22:18

You can find your bevel gear @ CAR-PARTS.COM. This is a website for junkyards, you will see tremendous inventory ranging from more expensive to the least, to find the cheapest page look for the asterisk in the bottom of the page and good luck, you cannot imagine on how much i saved, and passed this to many mechanics who never knew about this website.



[yoziyo](#)

New Member



Posts: 5

Joined: 13 Aug 2007, 21:38



Page 1 of 2 **1** [2](#) [Thread Tools](#)

[Display Modes](#)

#1

12-21-2007, 07:40 AM

[JoeJoe](#)   
Junior Member

Join Date: Dec 2007  
Location: New Haven, Connecticut  
Posts: 10

 **Banging noise after letting off of the gas**

Anyone know what the cause is of a loud banging noise after I accelerate then let off in the gas pedal? The bang sounds like it is coming from the rear of the car.



#2

 12-21-2007, 01:50 PM

[JRL](#)   
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,062

  
Quote:

Originally Posted by [JoeJoe](#)   
*Anyone know what the cause is of a loud banging noise after I accelerate then let off in the gas pedal? The bang sounds like it is coming from the rear of the car.*

That's not good, not good at all 

It could be one of several things. The least expensive would be the rear brakes and/or the E-brake. They can rust and the shoe break off inside.  
After that you're probably into the AWD and it could be really anything;  
The differential, the viscous coupling, the bevel gear or the driveshaft, none are be cheap to repair/replace.  
Sorry, but I can't be more help with just that statement



#3

 12-21-2007, 05:31 PM

[JoeJoe](#)   
Junior Member

Join Date: Dec 2007  
Location: New Haven, Connecticut  
Posts: 10

  
I just took it for another test ride; when I let off of the accelerator I hear and feel a bang followed by a strange metal on metal grinding (shhhhh) sound. It is defiantly not the e brake, I had those all apart last night. Oh well!  My first volvo will be my last. Should have done my research. I do plan on doing the work myself what ever needs to be done. Does any one know the typical costs of the expensive items "The differential, the viscous coupling, the bevel gear or the driveshaft".



#4

 12-21-2007, 06:34 PM

[JRL](#)   
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,062

  
More than you really want to spend.

As much again as the car is worth and perhaps more than that, depending on what broke

Driveshaft \$1000 round numbers, one hour labor

Bevel gear \$2300 round number and 5 hours labor

You don't even want to know the labor on the VC (you can buy that used).

But we're speculating, find out what's broken first

Helps to know the year and the **MILEAGE**



#5

12-22-2007, 07:17 AM

[JoeJoe](#)

Junior Member

Join Date: Dec 2007

Location: New Haven, Connecticut

Posts: 10



It is a 98 with 115K miles. I got under the car last night; nothing seems unusual, there is a small amount of play forward and backward in the driveshaft. With the car in the air, I spun the wheels and it didn't make any grinding noises. I have a feeling that it is the VC. I'm about to drive this thing off a cliff! 🤖



#6

12-22-2007, 01:47 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,062



Joe Joe Dancer, your life is calling...!

Anyhow, the easiest (and first) thing you can do is remove the driveshaft and see if the noise remains. If it's gone, it's very simple, you need a new driveshaft. If not we then go to plan B

When you bought the car were the tires even (tread wise) and are they now?



#7

12-25-2007, 06:46 AM

[JoeJoe](#)

Junior Member

Join Date: Dec 2007

Location: New Haven, Connecticut

Posts: 10



Hi JRL thanks for all of your responses so far; however there is something I don't understand.

If I remove the driveshaft and the noise goes away, I am not sure how we can say that it is the driveshaft. Couldn't it also still be the VC, or rear end? It seems to me that the only thing I can prove by removing the DS, is that if it continues to make the noise then I would know that it is not the driveshaft. Please correct me if I am

wrong. I want it to be as simple as you say.

I had my father take it for a ride last night; he thinks that the metal shhhhh sound is a rattle; maybe the disintegrated insides of the cat, or maybe a heat shield.

One other thing that I think that I noticed about the thump is that it as the car warms up it seems to not be as bad, or happen as often. Also it not only happens when I let off of the accelerator, It also sometimes happens when the tranny shifts.

Again, thanks for your help, all comments are appreciated.

When I got the car it had 4 new tires. Unfortunately cant tell what was on before.



#8

12-25-2007, 07:22 AM



Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,062



Quote:

Originally Posted by **JoeJoe**

*Hi JRL thanks for all of your responses so far; however there is something I don't understand.*

*If I remove the driveshaft and the noise goes away, I am not sure how we can say that it is the driveshaft. Couldn't it also still be the VC, or rear end? It seems to me that the only thing I can prove by removing the DS, is that if it continues to make the noise then I would know that it is not the driveshaft. Please correct me if I am wrong. I want it to be as simple as you say.*

*I had my father take it for a ride last night; he thinks that the metal shhhhh sound is a rattle; maybe the disintegrated insides of the cat, or maybe a heat shield.*

*One other thing that I think that I noticed about the thump is that it as the car warms up it seems to not be as bad, or happen as often. Also it not only happens when I let off of the accelerator, It also sometimes happens when the tranny shifts.*

*Again, thanks for your help, all comments are appreciated.*

*When I got the car it had 4 new tires. Unfortunately cant tell what was on before.*

Really sounds like a driveshaft.

As for removing the shaft, the rear and the viscous coupling are still turning. If the noise goes away, 99% of the time it's the driveshaft. VC's really don't go bad all that often, driveshafts do. At some point in an early Volvo AWD's life, the driveshaft WILL have to be replaced.



#9

12-26-2007, 07:52 PM

[JoeJoe](#) 

Junior Member

Join Date: Dec 2007

Location: New Haven, Connecticut

Posts: 10



Ok, so here is the update:

I removed the driveshaft and I think I located the source of the clunking noise. With the driveshaft out, I can push up on the VC, dropping it creates the thumping noise that I have been hearing. I am guessing that this is not normal and that the bushing shot; Ill have to pick up a new one at the dealer tomorrow.

I then decided to take the car out for a test drive; well, the metal grinding noise is still there, its different now. I used to hear the grinding periodically, now it is constant and increases with speed.

It couldn't just be the driveshaft. Actually the driveshaft looked good, at least through my eyes. Center bearing looks good.



#10

02-24-2010, 02:13 PM

[greenxc70](#) 

Junior Member

Join Date: Feb 2010

Location: MA

Posts: 2



I am having the same problem on a 2000. I had my brother who is a mechanic put it up in the air at his shop. I shifted the car in and out of drive and reverse while he checked it out. There is a mount at the front of the Viscous Coupling. The rubber bushing had slide out and now the VC is sitting metal on metal and moves when I shift. I am trying to find a replacement for this mount. I'll let you know what I find unless you find something first. I hope it won't mean replacing the whole VC which I did about a year and a half ago.



02-25-2010, 01:21 PM

[greenxc70](#) 

Junior Member

Join Date: Feb 2010

Location: MA

Posts: 2



Just picked up a rubber mount for the VC. \$31 from Volvo. Cheap price to pay. 



#12

03-18-2010, 02:49 AM

[XCfredde](#) 

Junior Member

Join Date: Mar 2010

Location: Sweden

Posts: 1



How did it go for your awd?

I have the same prob so im curious...



**Yikes! A little thud is now a big one**



Page 2 of 3

< 1 Thread Tools

[Display Modes](#) ▾

#11

08-24-2007, 04:06 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,062



Quote:

Originally Posted by [mynameismud](#)

**JRL** stated that "If the noise is still there in 2WD it can logically be only two things left, the differential or the viscous coupling", **but** it is my understanding that the BG **is** still spinning, though it is not possible for me to verify while driving. Further, the noise is gone and **the U-Joint and center bearing are fine.**

How can you be sure?

No way to see the center joint in the driveshaft.

You have eliminated the rear end and the viscous coupling. All that is left is the bevel gear and the driveshaft.

Since you still have a noise, albeit a different one I would suspect you (or someone who knows what to look for) should concentrate on the bevel gear. Make sure, they're expensive!



#12

08-24-2007, 05:02 PM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



Quote:

Originally Posted by [JRL](#)   
*How can you be sure?*

Sure of what? The Spinning of the BG or the condition of the bearing?

Quote:

Originally Posted by [JRL](#)   
*No way to see the center joint in the driveshaft.*

Perhaps we aren't talking about the same thing. I have the drive shaft off the car and the U-Joints as well as the center bearing are without play or binding friction.

Quote:

Originally Posted by **JRL** 

*You have eliminated the rear end and the viscous coupling. All that is left is the bevel gear and the driveshaft.*

I came to the conclusion that it was either the BG or the VC, since both spin without the driveshaft and the clunking noise is replaced with a metallic whirring.

Quote:

Originally Posted by **JRL** 

*Since you still have a noise, albeit a different one I would suspect you (or someone who knows what to look for) should concentrate on the bevel gear. Make sure, they're expensive! 🤖*

So what else to look for other than bone dry? I'm no amateur at turning a wrench OR rebuilding a complicated piece of machinery, I'm just not experienced with a Volvo BG. Any tips here would be great. Can I remove the BG and still drive for diagnostic purposes?

*Last edited by mynameismud; 08-28-2007 at 09:55 AM.*



#13

08-24-2007, 05:10 PM

**JRL** 

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,062



Quote:

Originally Posted by **mynameismud** 

*Can I remove the BG and still drive for diagnostic purposes?*

Not sure.

Now would be the time to take it to a Volvo mechanic or..🤖.the dealer!



#14

08-27-2007, 09:11 AM

**mynameismud** 

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



### Update #3

This weekend gave me the time to get into the BG and this is what I found:

A) A full 0.7L of oil was present and consequently removed from the BG. The color was quite dark, but not quite like molasses, and smelled like old gear lube, but not burnt. I replaced the lube and dried all surfaces with a shop towel.

B) The metallic whirring was still present (but a bit quieter? or was that the sound of the cicadas drowning it out?) and made me nervous as hell.

I'll be taking it to an indy here in the KC metro. If anyone has any suggestions as to a trusty and reliable mechanic in the area shoot me a PM.

BTW, it'll be a very cold day in hell before my rig is seen at Volvo Dealer, especially the morons that operate Superior Volvo in the KC area. When i have warranty/recall issues, I'll likely take it to STL or Spfd, MO

*Last edited by mynameismud; 08-27-2007 at 01:59 PM.*



#15

08-30-2007, 11:15 AM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58

#### News

Last nite I was able to build a jig to hold the driveshaft while I spun it using a drill. I found that every couple dozen revolutions I would get a binding in the front CV of the shaft and it would cause the drill to ratchet due to the torque setting (so as not to break my wrist). Further inspection reveals that the boot is torn at its base (very hard to see without probing with a flashlight).

Somehow relieved, I phoned my Volvo mechanic friend in Springfield to ask about replacement costs of the shaft. She informed me that there **IS** a repair kit available from Volvo for this CV.

She also informed me that there are TWO Superior Volvos in KC. The idiots I've been so put off by are on the South side of KC, but the knowledgeable and solid folks are found at Superior Volvo of North Kansas City (a different city altogether, found North of the wide Missouri River).

I spoke with Devon in the Parts Department who confirmed that there **IS** a service kit available. The kit runs \$241.48, and she informed me that there is only 1 kit available for 2000 model V70XC's, however I should count the number of splines on the shaft after I remove the bearing to avoid an extra trip. Currently I only have the last 4 digits of the part # (1204, and another for other models is 4441). When I buy and install this kit I will create a service How-To document.

Many thanks to all who have lent their experience and help.

*Last edited by mynameismud; 08-31-2007 at 07:05 AM.*



#16

10-05-2007, 11:55 AM

[Derf](#)

Join Date: Mar 2007

Location: Central Oregon, USA

Junior Member

Posts: 4



### Resolution?

I was just curious to hear how you were getting along with this problem. I am hearing some noises from the AWD on my '98 XC. I am just curious to hear how your noise turned out.



#17

10-09-2007, 04:14 PM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



### Well.....

I still cannot afford to buy the part. Sad, I know, but Mr. Murphy has reared his ugly head and won't leave me alone. I had saved the ~\$250 last week and was about to purchase it when, BAM!! You need a Root Canal! I'll be taking that ~\$250 now, thanks! I'll likely not be able to buy it until early November. Luckily I live very near work and a liquor store, so i just walk or ride my bike.

FWIW, I have driven it plenty (no HWY though) and the Thud has never re-appeared since I removed the drive shaft. This being said, the whirring noise I hear is definitely the BG. It only happens when accelerating or coasting downhill (i.e. with gears engaged slowing the vehicle). As i coast on a flat, I do not hear it, but as soon as I step on the gas even a little, I hear it engage and whirl.

I will post photos, part# and price and results when I get it fixed.



#18

11-09-2007, 02:33 PM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



### Got the part today

The Volvo part description is: Universal Joint. The part#: 30651204. And it's made in Germany.

I'll be installing it tonight, and I'll report if this was the fix or not. I'll admit that I'm a bit leary and nervous. If the VC or BG is shot, it'll be a deal breaker for me and I'll get shed of it ASAP.



#19

11-09-2007, 02:34 PM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



### Got the part today

The Volvo part description is: Universal Joint. The part#: 30651204. And it's made in Germany. It cost \$260.74 after tax.

I'll be installing it tonight, and I'll report if this was the fix or not. I'll admit that I'm a bit leary and nervous. If the VC or BG is shot, it'll be a deal breaker for me and I'll get shed of it ASAP.



#20

11-10-2007, 11:50 AM

[mynameismud](#) 

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



**Well**

I installed the part on the drive shaft last night.

This morning I re-installed the drive shaft. Then I drove it a couple of laps around the block- no noises.

At around 1:30PM I started out to the laundromat and heard the THUNK again. F'n \*\*\*\*. I just flushed +\$250 down the toilet. I'll be getting out from underneath this POS ASAP. 😡

For **ANYONE** reading this post who is considering buying an XC- **think again**. For an auto maker who prides itself on having +1Million mile cars and long haul tractor trailer rigs that go and go, this sure has shown me what Volvo is *really* like. Perhaps the biggest auto-purchase mistake of my life. Hell, my 1990 Ford Bronco II never stranded me in the last 5 years with twice the miles. Before that, my '76 VW microbus took over 140K of abuse from me and also never left me without a ride.

As for the professional mechanics out there who work on Volvos, consider me one less sucker who will be visiting your repair bays. NEVER AGAIN.



[hightest](#) 

Member

Join Date: Sep 2006

Location: Toronto Canada

Posts: 57



**Thud fixed**

Hi,

I had a similar thud when I put my 98xc in reverse and backed up - It was a loud thud in the back - When I went forward I got a slight thud - After about 10 visits to different mechanics a new guy put it back up on the hoist and said it is a bushing on the mount that holds the rear axle in place - (it is located dead center just where the drive shaft goes into the rear diff) - He had one of his guys put it in reverse while we stood underneath and there it was - When the car was put in reverse the drive train pushed up and the hanger hit the bottom of the car (sorry I am not too technical but it was a bushing on a mount that was worn and it let the mount hit the floor of the car)- It cost about \$100 bucks to repair and it has never come back...it only took two

months to figure out - Maybe your problem is as simple as that -

Hope this is your problem

Cheers



#22

11-14-2007, 09:15 AM

[mynameismud](#)

Member

Join Date: Nov 2006

Location: Missouri

Posts: 58



News

Got word today from my indy. Bevel Gear is shot.

Volvo Rebuilt: \$1883 part + \$380 labor =

Used w/56K: \$1300 + labor

Used w/95K: \$1200 + labor

I'm looking to get out from under this thing; if anyone in the region is interested give me a PM.



#23

11-14-2007, 10:08 AM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,062



Unfortunately,

This is a part you do **NOT** (under any circumstances) want to buy used.

I've had them be bad at 60K miles



**Driveline vibration**

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 1 of 2 **1** **2** [Thread](#)

[Tools](#)

[Display Modes](#)

#1

04-04-2006, 06:11 PM



Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150

**Driveline vibration**

Any suggestions on common causes of driveline vibration.

My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). I first noticed it after the propeller shaft was replaced because the "front CV joint of the shaft lost it's lube" but this may be a coincidence. Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range. The dealership that replaced the propeller shaft could not reproduce the vibration because they are not near an expressway. It had a couple other inspections with no obvious problems.

There has been a lot of maintainance since the vibration began including replaced tires, brake rotors/pads, parking brake pads, front struts, outer tie rod ends, spark plugs, lower right and upper motor mounts and it has had two alignments and a trans flush all with no affect.

Any suggestions would be greatly appreciated!  
Thanks.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#2

04-04-2006, 06:18 PM



Junior Member

Join Date: Apr 2006

Location: Chesapeake, VA, USA

Posts: 15



I hate to make an uneducated guess, but if I did I would have to say that the prop shaft was not installed correctly. You need to make that service center/dealership reproduce the problem ~ drive them to an expressway! I mean... if the problem started after the prop shaft was replaced, the logical explanation would be that there is something incorrect about the shaft. Maybe it was not balanced properly during installation? Just a guess. Good luck.

Quote:

Originally Posted by **srs**

*Any suggestions on common causes of driveline vibration.*

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the*

*vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). I first noticed it after the propeller shaft was replaced because the "front CV joint of the shaft lost it's lube" but this may be a coincidence. Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range. The dealership that replaced the propeller shaft could not reproduce the vibration because they are not near an expressway. It had a couple other inspections with no obvious problems.*

*There has been a lot of maintainance since the vibration began including replaced tires, brake rotors/pads, parking brake pads, front struts, outer tie rod ends, spark plugs, lower right and upper motor mounts and it has had two alignments and a trans flush all with no affect.*

*Any suggestions would be greatly appreciated!  
Thanks.*

2000 Volvo XC70 AWD SE  
[1998 BMW M3 5-Speed Sedan](#)  
[1958 Volvo PV 444](#)



#3

04-04-2006, 06:39 PM

[srs](#)

Senior Member

Join Date: Feb 2005  
Location: Michigan  
Posts: 150



I agree but the closest expressway is a one hour drive. Perhaps I will make the half day trek to one of the urban dealerships which are closer to an expressway.

I would think that propeller shaft balance problems would be more constant at all speeds. I was guessing maybe the bevel gear or AWD system might produce my problem.

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#4

04-05-2006, 08:00 AM

[geofmd](#)

Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5



#### **Driveline vibration**

I'm having the same problem with my '99 v70 x/c. The same scenario as well. When the front CV joint of the drive shaft went bad there was a hell of a vibration and

noise. I'm wondering if the vibration could have damaged the drive shaft. Is it possible to remove the drive shaft and test drive the car to isolate the problem? Has anyone done this?



#5

04-05-2006, 05:03 PM

[srs](#)

Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150



In my case the drive shaft, a \$950 part (under extended warranty) was replaced with the 65-70mph vibration occurring afterward. No problems prior. They noticed it incidentally while evaluating a separate problem they were having difficulty diagnosing which eventually turned out to be a broken right motor mount. This was causing a grinding vibration but only with left hand turns. The two vibrations were quite different but I suspect there is a potential relationship. It took a year and multiple visits and failed repairs (like new wheel bearings) before the broken motor mount replacement fixed the left turn vibration. Perhaps it caused the drive shaft problem.

Am I to understand you had a bad vibration/noise, then the front CV on the driveshaft was replaced leading to a problem like I am experiencing? I am not familiar enough with this car to know if the CV joint is integral to the shaft or if it can be replaced separately. I have heard of the driveshaft being removed as a test but I have also heard this may damage the AWD system much like not rotating tires regularly.

---

Steven

2007 XC90 V8

1998 V70XC

1992 245



#6

04-05-2006, 05:49 PM

[cossie1600](#)

Senior Member

Join Date: Jan 2006

Location: CT

Posts: 147



i have a slight vibration when i let off the gas between 60-40mph too. The vibration is mostly at the steering wheel.

---

98 XC

04 Z



#7

04-13-2006, 06:27 PM

[hotvolvo](#) 

Junior Member

Join Date: Sep 2005

Location: MN

Posts: 7



### **Driveline vibration worsens**

I have a 98xc with the same condition which has now worsened to vibrating all the time...and pretty annoyingly in town at 30mph. I replaced the rear drive shaft and carrier but that didn't help (thought carrier had excessive play but ? what's excessive). I've replaced brakes rotors and the wheel bearings were all tight. Perhaps it is the front passenger side driveshaft. Anyone else solved this vibration?

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range.*



#8

04-17-2006, 04:08 PM

[moose\\_man](#) 

Junior Member

Join Date: Feb 2006

Location: Colorado

Posts: 3



### **fixed driveline noise and vibration**

I had started a post some time ago about a problem with vibration, and more noticeably at first, noise coming from under my car. The noise was the same as you would get when tapping on the driveshaft with a metal object (ie: the blade of a screwdriver) and sounds like a "pinging" type of noise. At first I thought something was hitting the driveshaft, but I could find no such thing. Finally I took the car to a Volvo shop and they correctly diagnosed the problem as the rear driveshaft itself.

At first I discovered that it would be around \$1000 to replace the rear driveshaft with a new one, so to be sure before I did anything else I removed the driveshaft and gave it a little test drive around the block. The noise and vibration were gone, so I figured that the original diagnosis was correct. Then I searched on the internet for a used driveshaft and after quite a bit of looking and calling I was able to find one for \$275 shipped to my house. I have since replaced the driveshaft and had no other problems with noise or vibration.

A few notes of interest. I drove the Volvo approximately 4000 miles with this condition and while the vibration did get a little worse it did not seem to cause any other damage. I considered driving without the rear driveshaft, using the front wheels only, but was discouraged from this idea by the shop who had correctly diagnosed the problem. They claim that continued driving without the rear driveshaft in place will damage the rear end. Also, after removing the original rear driveshaft I discovered that the u-joint coupling near the transmission was bad. Unfortunately it is a sealed deal, connected by a flange to the transmission. No way to replace the u-joint only, so I had to replace the whole shaft. I hope that this helps some folks out there experiencing the same problem. Good luck!



#9

04-17-2006, 05:08 PM

[steve1957](#) 

Junior Member

Join Date: Feb 2006

Location: toronto

Posts: 11



Quote:

Originally Posted by **hotvolvo**

*I have a 98xc with the same condition which has now worsened to vibrating all the time...and pretty annoyingly in town at 30mph. I replaced the rear drive shaft and carrier but that didn't help (thought carrier had excessive play but ? what's excessive). I've replaced brakes rotors and the wheel bearings were all tight. Perhaps it is the front passenger side driveshaft. Anyone else solved this vibration?*

*My 1998 V70XC vibrates but only between 65 and 70 mph. The intensity of the vibration does vary but for no known reason. It is felt throughout the car (steering wheel, seats, accelerator pedal, dash). Slipping the transmission into neutral has no affect, nor does increasing load going uphill, decreasing load while coasting downhill or while braking though the affected speed range.*

All, I have a 2001 xcv70. I am always experiancing bad vibration....I take off the rear wheels, clean all the stuck mud from inside the rims. big chunks gather inside after driving on a wet gravel road..... This causes a lot of serious imbalance and bad vibration. Very poor designed alloy rims I must say.

StevePv5441957



#10

04-22-2006, 06:48 PM

[hotvolvo](#) 

Junior Member

Join Date: Sep 2005

Location: MN

Posts: 7

**Driveshaft Carrier Bearing and VC**

First I replaced a broken right (passenger) motor mount. It helped by eliminating motor movement that I hadn't really noticed before (makes the engine smoother-at least in the engine bay). I also replaced the viscous coupling to eliminate the pinging/snapping sounds. And, I replaced the driveshaft with a used one...which lasted about 5,000 miles and needs to be replaced again due to the vibration it is causing. I believe it is the carrier bearing that is worn. I have started to also get the pinging back from the new VC just like it started before. I removed the driveshaft and drove a couple miles out of town to take it up to speed. Vibration is gone with the driveshaft as is the VC pinging (since it is no longer operational without the driveshaft). I plan to drive it without the rear driveshaft until I can save \$2000 for a new VC and driveshaft. We'll see if it breaks anything in the tranny without the rear driveshaft installed.

**Driveline vibration**

Top of Form

User Name

Remember Me?

Password



[Display Modes](#)

#11

05-10-2006, 07:52 AM

[Mk1Racer](#)

Junior Member

Join Date: Jul 2005

Location: NJ

Posts: 21



I've recently noticed a vibration that's developed in my '98 V70 XC. I replaced the p/s motor mount, both control arms, and both front struts. I get a shudder when I am almost stopped, and again, when I pull away. It seems to be much worse when making tight turns, more so only l/h than r/h turns. I'm wondering if it's the p/s drive shafter or outer CV joint, or could it possibly be the angle gear? I don't have a vibration at speed.



#12

05-15-2006, 11:06 AM



[bugjar](#)

Junior Member

Join Date: Feb 2006

Location: detroit Metropolitan area

Posts: 20



**same problems driveshaft vibration/ give**

I took my car into a local all purpose service place brakes,oil, tires, etc. Because my car is experiencing the same problems, i.e. driveline vibration as I let off the gas in 4th gear a heavy shudder throughout. I was told there is excessive play in the driveshaft, which is not good obviously, is it imperative I get car to my independent immediately or do I have a little time? Also does anyone have an idea where I could find the parts I need for cheaper (haven't had it diagnosed by indy yet but guessing propeller/ front or rear driveshaft.)



#13

05-15-2006, 07:13 PM

[srs](#)

Senior Member

Join Date: Feb 2005

Location: Michigan

Posts: 150



**Parts**

For OEM parts, I have had good luck with Beechmont Volvo in Cincinnati, OH, 1-800-255-3601.

The give a 20% discount (possibly only for VCOA members) and never any shipping charges. I have ordered large items like a driveshaft for a 240 which had to be sent

from Sweden and also once a windshield and still no shipping charges. Most of the parts guys/gals are very helpful. Local dealships will often discount the parts also but there are none near me. I live in rural Northern MI and parts arrive in two days, three days if they have to special order it.  
I hope this is helpful.

---

Steven  
2007 XC90 V8  
1998 V70XC  
1992 245



#14

08-02-2006, 01:09 PM

[geofmd](#)   
Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5

**Driveline vibration**

My '99 XC is back in the shop for driveline vibration. It all started with a vibration/pinging ratcheting sound that turned out to be a bad viscous coupling at the front of the drive shaft. (Rubber grease seals failed leading to failure of the coupling). If yours hasn't failed yet check for grease expelled from this coupling before it's too late. Anyway, after the VC was replaced, I noticed there is still a vibration at around 65mph. Volvo shop is now looking into the possibility that the shop that replaced the VC did it wrong. Apparently, one of the bolts that mounts the VC is longer than the others and needs to be put back in the same hole it came out of for proper balance. We shall see how this goes.



#15

08-31-2006, 06:24 AM

[geofmd](#)   
Junior Member

Join Date: Mar 2006  
Location: Eastern Seaboard  
Posts: 5

**Drive shaft vibration**

My front CV joint went bad on my driveshaft causing a bad vibration and ping and ratcheting sound. I had the CV joint replaced at an independent shop because there is no close by Volvo dealer. For the most part that fixed the problem but there remained some vibration at 60-70 mph. It turns out that when the drive shaft is removed you need to replace every mounting bolt in the exact place it came from. On mine, one bolt at the rear of the driveshaft is longer than the others for balancing purposes. This bolt was reinstalled in the wrong position and caused the vibration. There is no easy way of identifying the proper place for the balance bolt. Anyway I had the balance bolt replaced with a standard bolt and the vibration went away. I guess the drive shaft is not perfectly balanced now but it's not noticeable to me.

## [98 v70 xc drive shaft removal](#)

[Post a reply](#)



## [98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 24 May 2009, 10:16

This isn't a new topic, but I couldn't find the thread...

I need to replace the drive shaft (bad center bearing) and I need to know if it's safe to drive without the shaft assembly in place, and, if need to cap the mounting points front and rear.

John G.  
Maine



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

## [Re: 98 v70 xc drive shaft removal](#)

by [holler1](#) » 24 May 2009, 12:17

From reading this and other forums, lots of people are running former AWD cars w/o the driveshaft. The actual driveshaft unbolts from the angle gear and the viscous coupling at two flexible couplings. Here is a picture of mine at the rear. The front coupling is identical. I have also heard that it's important to mark which bolts are which so they can be put back in the same place for balance. I haven't read anything about the need to cap the shafts after removing the driveshaft. I have never had mine out but did replace the front flex coupling. I'm not familiar with what is needed to replace the center bearing. It might be possible to fix the bearing w/o a complete new shaft.



1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1

Previous: 1982 Volvo DL (240) 160000

1998 Tacoma, Fords (5), Dodge, Montero,  
GTO, Sunbeam Alpine, VW Dasher

---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 24 May 2009, 13:12

very helpful... Thanks, and I've been reading a little about rebuild kits for the center bearing. I'll let you know...

John G.  
Maine



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 25 May 2009, 17:24

Got it apart, kind of. How do I remove the drive shaft from the rear? I removed the "flange" only to expose a bearing that the shaft won't come out of. The front is on the ground, out no prob. Ideas?

John G.



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

### [Re: 98 v70 xc drive shaft removal](#)

by [holler1](#) » 25 May 2009, 18:09

Here is a file on the AWD that has a small section on the prop shaft removal.



[volvo v70 EARLY AWD FINAL DRIVE REPLACE.pdf](#)

(945.35 KiB) Downloaded 868 times

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1  
Previous: 1982 Volvo DL (240) 160000  
1998 Tacoma, Fords (5), Dodge, Montero,  
GTO, Sunbeam Alpine, VW Dasher  
---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 25 May 2009, 18:55

You saved my bacon. I was thinking about it too much. All it needed was a solid rap with a ball-peen hammer to separate the end of the drive shaft (which houses a really cool omni-directional bearing assembly) from the housing.

John G.

Maine



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

### [Re: 98 v70 xc drive shaft removal](#)

by [holler1](#) » 25 May 2009, 19:03

Yes, that roller-ball-bearing thing is cool. I remember taking the front one apart- 3 years or so ago. I couldn't find any pictures of it.

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge  
2008 Ford Fusion AWD 27500  
1991 Toyota Camry 160000#1  
Previous: 1982 Volvo DL (240) 160000  
1998 Tacoma, Fords (5), Dodge, Montero,  
GTO, Sunbeam Alpine, VW Dasher  
---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 26 May 2009, 12:51

To wrap this topic up:

Jack stands required, this isn't worth killing yourself over.

1. Remove two bolts from center exhaust hanger that hold the center bearing support in place. You may have to loosen (or remove) the support itself from the body, four bolts.
2. Remove six 6mm allen-head cap screws from the front and rear "flanges" of the drive shaft.
3. Sharp raps on the rear flange (the rusty part in the image previous to this post) until the rear of the shaft falls free.
4. Remove shaft to the rear of the vehicle.

That exhaust hanger / bearing support may give you trouble at this point, it's no big deal to remove it or at least unbolt it and let it hang on the exhaust pipe while you extract the shaft.

The car handles and runs fine without the drive shaft, but in Maine it makes sense to get a replacement before the snow flies.

Thanks, holler1, I appreciate your help.

John G.  
Maine



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

### [Re: 98 v70 xc drive shaft removal](#)

by [holler1](#) » 26 May 2009, 19:30

Welcome, and thanks for documenting the removal info.

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1

Previous: 1982 Volvo DL (240) 160000

1998 Tacoma, Fords (5), Dodge, Montero,

GTO, Sunbeam Alpine, VW Dasher

---



[holler1](#)

Senior Member



Posts: 445

Joined: 25 Jun 2008, 20:32

Location: West Virginia

### [Re: 98 v70 xc drive shaft removal](#)

by [terrencekeenan](#) » 03 Jun 2009, 12:46

How did you determine it was a bad drive shaft bearing.

It looks like these guys were torn over that or a wheel bearing issue:

<http://www.s14.net/forums/showthread.php?t=20326>



[terrencekeenan](#)

Member



Posts: 40

Joined: 09 Feb 2006, 22:14

Location: St. Louis

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 03 Jun 2009, 13:03

It started as a rumble that appeared to come from the front end from a strut or cv joint during cornering. A local garage told me it was the ball joints. \$700 later, no fix. I procrastinated for a long time, then had some brake work done. For some reason, a squeak (like a wheel bearing) started and someone said it sounded like it was coming from the center of the vehicle. I thought the two were unrelated until the rubber membrane completely let go and the shaft began thumping around at the joint. It wasn't obvious until that point. After I took the shaft assembly out, no rumble, problem solved. ...until I have to buy a shaft.



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

### [Re: 98 v70 xc drive shaft removal](#)

by [strategy](#) » 08 Aug 2009, 16:12

Well....

Thanks to everyone here, I just finished taking the drive shaft off of my 98 XC70 (157,000 miles).

description of problem – I had a rumble in reverse and when starting off and turning at slow speeds.

It took me about three hours to complete. I believe the time was longer for me as I didn't work with a lift. I worked on four ramps in my driveway. The 6th drive shaft bolt in the front was a bear to get off (probably an hour alone), but I finally got it off with about four extensions on my ratchet!!! Since the shaft is out, NO MORE NOISE!!! I plan on leaving it out and keeping it a front wheel drive car. On a scale of 1 to 10, with 10 being the hardest, I'll give it a 6.

Couple hints –

– keep the center bearing loose but secure (2 bolts). This will stop the shaft from falling on you, and give you some play to get your ratchet in to loosen the bolts

- remove the front first. Couple raps on the flange, after the bolts are removed, makes it easy to get off
- the two bolts on the center of the plate that holds the center bearing in place should be removed after you take off the front and back ends of the shaft. The shaft will come out pretty easy after that.
- oh, and I didn't have to remove the viscous coupling ( i think that's what it's called) on the back end of the shaft (sounds are gone). Seems like that might be a bit tough to get to...especially the bolts at the top of the sleeve. Does anyone know if I'm causing problems leaving it on without the shaft??
- Do I plan on putting a shaft back on? Heck no!!!

Other jobs I've done on the XC70,

- top engine mount - a bit of a job getting it in - about a 4
- engine mount (right side passenger side) about a 4
- front strut mount - about a 4
- various electrical items - ect sensor, etc. - easy
- maintenance - brakes, etc - easy

Quirky car...

Looks like you have to like to work on cars to own a volvo, unless you have alot of cash...so far, the jobs haven't been too bad. I'll post back to let you know how it's performing as a FWD car. So far, the handling is just about the same...power about the same too.

Thanks for helping me with this job, guys. You have no idea how much money I've saved

checking in here.

Jim



[strategy](#)

Posts: 2

Joined: 23 Apr 2009, 09:17

Location: New Jersey

Model, Year: 1998 S70/1998 XC70

### [Re: 98 v70 xc drive shaft removal](#)

by [strategy](#) » 02 Jan 2010, 07:14

Update January 1 (5 months later):

Hello and Happy New Year. I'm happy to report that there have been no adverse reaction to my removing the driveshaft. Living in the Northeast US, I was afraid that the car wouldn't handle very well in the snow, but it was fine. Replacing the drive shaft was out of the question because of the cost and the book value of the car. It was a bit of a pain to remove in my driveway (I'm not a mechanic), but I'm glad I was able to do it in about 3-4 hours. The biggest pain for me was, since I was working off of jack stands and ramps, I had to spin the tires to get to the bolts which were at the top of the rear differential. I also had to use a couple extenders on my ratchet to get to the front of the shaft where it attached to the transmission. On a scale of 1 to 10 (10 being the hardest), I give this a 7. It was made harder because it wasn't up on a lift. If it was on a lift, probably a 4.

>

> One word of caution. Make sure you're out of the way when

the shaft drops. It's heavy and can cause some damage if it hits you.



[strategy](#)

Posts: 2

Joined: 23 Apr 2009, 09:17

Location: New Jersey

Model, Year: 1998 S70/1998 XC70

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 04 Jan 2010, 19:13

I agree with your assessment of the job. I was lucky to have a concrete floor to work on.

## [98 v70 xc drive shaft removal](#)

[Post a reply](#)

17 posts • [Page 2 of 2](#) • 12

### [Re: 98 v70 xc drive shaft removal](#)

by [RichSad](#) » 31 May 2010, 15:30

Hi all,

I need to do this on my 99 V70 XC. Is the procedure basically the same? Any differences worth noting? I am getting a prominent clunking noise from the rear drive shaft that I believe will go away if I remove it.

I am considering operating it for the summer as an FWD, and then having Colorado Driveshaft rebuild it and put it back on over the winter. Does this sound like a decent

plan?

A little history: the clunking started in reverse during the winter and has gotten more prominent. It happens when the car first starts rolling, and then again (sometimes) between 3rd and 4th gears. Engine mounts seem OK and no problems with tranny. It really feels like it is coming from the rear drive shaft and I know this component is troublesome with 99 XCs. Mine has about 160k miles and is otherwise in excellent shape. Would love to get another 50k–100k miles out of the car. I realize I will have repairs to do from time to time to get that.



[RichSad](#)

Member



Posts: 64

Joined: 18 Dec 2009, 19:19

Location: Massachusetts, USA

Model, Year: 1999 v70 xc

### [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 04 Jun 2010, 19:23

You won't hurt anything by removing the shaft. If the noise persists, just put it back in. It wasn't a bad job once I figured out what was going on. The pictures in the thread really helped. Good luck.

John G.



[johngrant67](#)

New Member



Posts: 9

Joined: 24 May 2009, 09:59

Location: Maine

Model, Year: v70 xc 1998

## [Re: 98 v70 xc drive shaft removal](#)

by [johngrant67](#) » 22 Jul 2010, 13:06

This one is for Brad:

I had no ill effects after removing the shaft. I'm not sure why you'd want to remove a good shaft since this car is like a half-track in the snow in AWD, but I'm sure you have a good reason. You should be all set. I recently sold my 98 and I see the gentleman driving it all the time.

John G.

"Hey John, I too am in Maine and recently purchased a one owner 2000 V70 AWD w/ 170k miles on it. I'm not getting any funky noises or anything like that, but nevertheless I am considering removing the drive shaft and >maybe< putting it back on before snow flies. My question to you is, did you ever end up reinstalling your drive shaft, or did you run it as FWD all winter? If FWD, how did it handle in the snow? Any input is appreciated!  
– Brad"

## Symptoms of a bad drive shaft

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)

 Reply

[Thread](#)

[Display](#)

[Tools](#) 

[Modes](#) 

#1

 07-05-2006, 08:45 AM



[S14E30](#)  
Registered



[View My  
Gallery!](#)



Model: US  
Year: 88  
Color: zinnoberrot  
Stock hp: 160?  
Current hp 195-200whp  
Displacement: 2.5L  
Transmission: 265

Cams: schrick 284/276  
Giac  
Differential: 4:10  
Intake: AFM  
Shocks: koni  
Springs: Ground Control  
Primarily: Street and Track

Join Date: 26, 2, 2006  
Location: SoCal  
Posts: 849



#### Symptoms of a bad drive shaft

I read through some old threads I think something is wrong with the drive shaft based on the vibrations I've been getting.

Symptoms: Under acceleration in first and second gear, I am getting a vibration from the rear. It feels like my rear passenger side wheel is spinning on some pebbles. It only happens once in awhile in 1st & 2nd gear at about 2000-3000rpm.

Where should I start to try and solve the problem? I poled my head under the car this weekend to see if I can keep see anything obviously wrong and found nothing.

TIA



quote

#2

 07-05-2006, 08:50 AM



[///Mflossin](#)  
GOD aka Zeus



[View My  
Gallery!](#)

Model: US Spec  
Vin#: WBSAK0305J2197353  
Year: 12/1987  
Color: lachssilber  
Stock hp: unknown  
Current hp unknown  
Displacement: 2.5L  
Transmission: 265

Cams: E3/E2  
Alpha N  
Differential: 4.10  
Intake: Carbon Fiber  
Ignition: Stock  
Shocks: Bilstein  
Springs: GC/Eibach  
Primarily: Garage Queen

Join Date: 23, 9, 2006  
Location: CT  
Posts: 4,933



could be a few different things going on. The driveshaft is a system with the Guibo and center support bearing. I'd replace everything for piece of mind. Have on or the other not "up to snuff" will wear out the other so I'd replace in sets.



quote

#3

 07-05-2006, 08:53 AM



[AlpineRunner](#)  
::dedicated::



[View My Gallery!](#)



Model: US  
Year: 1990  
Color: Alpinweiss II  
Displacement: 2.3L

Cams: Schrick 284/276  
Alpha-N, Iigomotiv  
Intake: CF DTM replica  
Ignition: Magnecore  
Shocks: GC Koni  
Springs: GC 375/475  
Primarily: Street Car

Join Date: 6, 9, 2006  
Location: Stamford,  
Posts: 3,097



It could be a wheel bearing, especially if you say it's coming from the rear passenger wheel. A bad wheel bearing can sound like a grinding and can resonate at certain frequencies (related to speed) to sound worse.

"It is needless to say that self-propelling vehicles, like other machines, will never do as much for one who does not understand them as for one who does."

#4

 07-05-2006, 09:32 AM



[///Mflossin](#)   
GOD aka Zeus

[View My  
Gallery!](#)

Model: US Spec  
Vin#: WBSAK0305J2197353  
Year: 12/1987  
Color: lachssilber  
Stock hp: unknown  
Current hp unknown  
Displacement: 2.5L  
Transmission: 265

Cams: E3/E2  
Alpha N  
Differential: 4.10  
Intake: Carbon Fiber  
Ignition: Stock  
Shocks: Bilstein  
Springs: GC/Eibach  
Primarily: Garage Queen

Join Date: 23, 9, 2  
Location: CT  
Posts: 4,933



Quote:

*Originally posted by AlpineRunner*

**It could be a wheel bearing, especially if you say it's coming from the rear passenger wheel. A bad wheel bearing can sound like a grinding and can resonate at certain frequencies (related to speed) to sound worse.**

good point Mike.



#5

 07-05-2006, 12:35 PM

[petro](#)   
Registered

[View My  
Gallery!](#)

Model: US  
Year: 1990  
Color: Imola  
Stock hp: 195  
Displacement: 2.3

Iigo  
Primarily: Street Car

Join Date: 17, 3, 2  
Location: San Jose  
Posts: 868



I agree sounds like wheel bearing.

so what are the symptoms of a bad center support bearing (CSB)?

Petro

#6

 07-05-2006, 12:37 PM



[///Mflossin](#)   
GOD aka Zeus

[View My  
Gallery!](#)

Model: US Spec  
Vin#: WBSAK0305J2197353  
Year: 12/1987  
Color: lachssilber  
Stock hp: unknown  
Current hp unknown  
Displacement: 2.5L  
Transmission: 265

Cams: E3/E2  
Alpha N  
Differential: 4.10  
Intake: Carbon Fiber  
Ignition: Stock  
Shocks: Bilstein  
Springs: GC/Eibach  
Primarily: Garage Queen

Join Date: 23, 9, 2  
Location: CT  
Posts: 4,933



you'll get some knocking or gurgling or vibration depending on the degradation of the webbing on the CSB unit.



quote

#7

07-05-2006, 02:23 PM



[Steven](#)  
Registered



[View My  
Gallery!](#)

Model: Euro Convertible  
Year: 1993  
Color: Granite Silver  
Displacement: 2.5L

Join Date: 13, 3, 2006  
Location: UK  
Posts: 211

sounds like a centre bearing!



Wanted, Plastic E36 M3 cam cover from the USA



quote

#8

07-06-2006, 12:49 AM



[one\\_owner](#)  
original owner



[View My  
Gallery!](#)



Model: us  
Year: 88  
Color: alpine white  
Displacement: 2.5

Join Date: 21, 5, 2006  
Location: los angeles  
Posts: 96

do a little more testing to find the culprit before throwing money at it.

bearing test: drive at a speed that will produce the noise. swerve back and forth like an f1 driver (\*not\* alonso) trying to get heat into the tires. if the loading and unloading cause a change in pitch of the noise, then it is the wheel bearing.

driveshaft/csb test: accelerate hard in first and second. if you feel a thumping from the trans tunnel at lower rpms, approximately where the hand brake is, driveshaft. bad driveshafts can take out the csb, reman driveshafts usually come with a new csb. you do not need to replace a guibo/flex disc if it's in good shape when you replace the driveshaft, \*but\* if there is \*any\* sign of cracking (or worse) it'd be silly not to.

guibo/flex disc: look at the unit and if it's cracking and/or you see string and chunks missing, replace it.

your description doesn't seem to exactly fit any of these categories. i might suggest having a buddy ride in the right rear seat while you do these tests and get some

feedback from him.

hth,  
greg  
garber's



quote

#9

07-06-2006, 08:52 AM



**S14E30**

Registered

[View My  
Gallery!](#)



Model: US  
Year: 88  
Color: zinnoberrot  
Stock hp: 160?  
Current hp 195-200whp  
Displacement: 2.5L  
Transmission: 265

Cams: schrick 284/276  
Giac  
Differential: 4:10  
Intake: AFM  
Shocks: koni  
Springs: Ground Control  
Primarily: Street and Track

Join Date: 26, 2  
Location: SoCal  
Posts: 849



Is there there any symptom that would occur to pin point whether its a wheel bearing or csb?  
Another symptom I just started is the car is pulling to the right. Would this be wheel bearing related?

I checked the Guibo, and it seems fine.

I'll do some testing this weekend. One problem i have is my dang exhaust is so loud, its hard to hear a  
other noises.

Thanks everyone, keep the sugestions coming! I'm trying to get this fixed to hit up my first auto-x.



qu

#10

07-06-2006, 10:36 AM



**Eric Giles**

Registered

[View My  
Gallery!](#)



Model: US M3  
Year: 1988  
Color: Diamantschwarz  
Displacement: 2.3L

Join Date: 11, 4, 2003  
Location: Waynesboro, N  
Posts: 353

I have a very similar issue, and it is annoying! The previous owner replaced the driveshaft with a remar  
back around 2001, and has approximately 25k miles on it-possibly less. I get the same vibration that y  
do in first and second gears at around 2-3k RPM. I have replaced the flex disc and it made no change.

If I am coasting and 4th or 5th gear, and get on and off the throttle quickly, I can feel what seems to b  
rear subframe hitting the bottom of the car as slack is taken up. I do know the rear subframe bushings  
original at 146k miles and need replacing-I have the parts but just have to find the time to pull everyth  
apart.

I am hoping that replacing the tranny and subframe bushings will help bring the driveshaft back into th  
proper alignment and all will be well. However, the problem might be something else that is not as  
common-the differential. I have heard of people that had similar vibrations, and after replacing the diff  
went away. Regardless, I am anxious to hear what the problem is.

Eric Giles  
'88 M3 Diamantschwarz/Black  
'00 M5 Lemans Blue/Black  
'87 325is Delphin/Black

^ quote

#11

07-06-2006, 03:06 PM



[hardtailer](#)



Registered

[View My Gallery!](#)

Model: Euro  
Year: 1986  
Color: Lachssilber  
Displacement: 2.3

Join Date: 25, 7, 2004  
Location: Germany  
Posts: 1,122

When the subframe bushes fail the diff bush takes a lot more load. It's advisable to replace it at the same time as the subframe bushings are replaced.

On a(n side) note: the combination of stiffnesses of the rubber bushes in the subframe and the one in the diff cover is a carefully engineered one. Together they counteract the normal tendency of a semi trailing arm setup to develop toe-out during cornering. I bet few people knew that, not even all the providers of stiffer bushes...

 **2008 Stryker Supporting Member**

^ quote

#12

08-01-2006, 04:39 PM

[KauzE30M3](#)



::novice::

[View My Gallery!](#)

Model: M3  
Year: 1990  
Color: Brillantrot  
Displacement: 2.3L

Join Date: 5, 1, 2004  
Location: Fairfield Ca.  
Posts: 43

Did you find out what was wrong? I had the same problem last week, small vibration in 1st and 2nd gear on acceleration (same RPM range). Something gave out three days after I noticed it. The car shook like crazy in every gear, pretty scary. It's in the shop right now...I'll let you know when I find out what happened. Peace.

^ quote

#13

08-01-2006, 04:46 PM



[Eric Giles](#)   
Registered

[View My  
Gallery!](#)



Model: US M3  
Year: 1988  
Color: Diamantschwarz  
Displacement: 2.3L

Join Date: 11, 4, 2003  
Location: Waynesboro, MS US  
Posts: 353

Quote:

*Originally posted by KauzE30M3*

**Did you find out what was wrong? I had the same problem last week, small vibration in 1st and 2nd gear on acceleration (same RPM range). Something gave out three days after I noticed it. The car shook like crazy in every gear, pretty scary. It's in the shop right now...I'll let you know when I find out what happened. Peace.**

I just got finished replacing all of the rear bushings, and although at first the vibration was better, now it seems to be back again just as bad. This is my experience so far, not sure what the original poster has discovered. I would be very interested in what your shop finds out, as I am about at my wits end on this vibration.

Eric Giles  
'88 M3 Diamantschwarz/Black  
'00 M5 Lemans Blue/Black  
'87 325is Delphin/Black



quote

#[14](#)

 08-02-2006, 09:12 AM



[S14E30](#)   
Registered

[View My  
Gallery!](#)



Model: US  
Year: 88  
Color: zinnoberrort  
Stock hp: 160?  
Current hp 195-200whp  
Displacement: 2.5L  
Transmission: 265

Cams: schrick 284/276  
Giac  
Differential: 4:10  
Intake: AFM  
Shocks: koni  
Springs: Ground Control  
Primarily: Street and Track

Join Date: 26, 2, 2003  
Location: SoCal  
Posts: 849



Quote:

*Originally posted by KauzE30M3*

**Did you find out what was wrong? I had the same problem last week, small vibration in 1st and 2nd gear on acceleration (same RPM range). Something gave out three days after I noticed it. The car shook like crazy in every gear, pretty scary. It's in the shop right now...I'll let you know when I find out what happened. Peace.**

Definitely let me know what happened. My problem just went away. I can't get it to replicate. I got a buddy to ride with me to see if he can hear where it was coming from, but I can't get it to do it again. I want to start changing out all my bushings next, but I'm not sure where I want to start.



**2008 S14.net Supporting Member**



quote

#[15](#)

 08-04-2006, 01:28 PM

[KauzE30M3](#) 

::novice::

Model: M3  
Year: 1990  
Color: Brilliantrot  
Displacement: 2.3L

Join Date: 5, 1, 2004  
Location: Fairfield Ca.  
Posts: 43

[View My Gallery!](#)

They fixed it, and it feels good to have it back! It was pretty minor. They replaced the front flex disc and the tranny cross mounts. Works fine now. The flex disc was worn out, screws were missing...probably fell out.

*Last edited by KauzE30M3; 08-04-2006 at 01:31 PM..*

## 99 V70 XC Shutter/skip on slow speed turns...Help!

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 1 of 2

**1**

[2 Thread Tools](#) 

[Display Modes](#) ▼

#1

03-15-2008, 06:06 PM

[FE MAN](#) 

Junior Member

Join Date: Mar 2008  
Location: CT  
Posts: 7



### 99 V70 XC Shutter/skip on slow speed turns...Help!

Hello,

I have a 99 XC v70 and recently when I slow down to a stop or slow down to ~10-15 mph and turn right (onto another street) it seems to shutter and the steering wheel shakes. Any ideas? Is it a bad cv joint ?

THanks for your help!



#2

03-15-2008, 07:38 PM

[JRL](#) 

Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,063



Most probably the driveshaft, they go bad  
Could be the transmission, could be the bevel gear, but unlikely by your description



#3

03-16-2008, 07:08 AM

[FE MAN](#)   
Junior Member

Join Date: Mar 2008  
Location: CT  
Posts: 7



Thanks for the info. When you mean driveshaft, are you thinking the one going to the rear diff or one of the front half shafts?

Also did some more investigation, It does it on slow speed acceleration as well. I can pinpoint it down to light acceleration from 5 mph -15 mph....  
I tend to think it is one of the 1/2 shafts because I can feel it in the steering wheel, but I am now suspicious of the rear drive shaft as I thought that I heard a slight squeek with the window open.



#4

 03-16-2008, 07:26 AM

[JRL](#)   
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,063



There is only one driveshaft (Volvo calles it the propshaft)  
Long 5' round tube thingee  with 3 U joints!

The front shafts are called axles.

Easy to find out if it's one of those, but it's most likely  
the *drive* (opps!) propshaft, \$1000 or so, they FAIL.

That's what it feels like, a shudder. First when turning, then  
all the time as it becomes worse.

If it's determined that the **FRONT U joint is bad, (\$300 or so)** there is a replacement part.

**If it's the *center* or the rear joint (the rear rarely fails), you have to buy a new driveshaft.** A bad one will  
really fight you (in the steering wheel) until the XC at one  
point becomes undrivable

People have found a couple of shops in the country that  
rebuild them for less, you can try a search here I don't know  
who they are

*Last edited by JRL; 03-16-2008 at 08:53 AM.*



#5

 03-17-2008, 06:17 PM

[FE MAN](#)   
Junior Member

Join Date: Mar 2008  
Location: CT  
Posts: 7



Thanks for the info.

I crawled under the car and only found 1 universal joint on the prop shaft. It is just before the carrier bearing assy (above the Catalytic converter). I did not pull the prop shaft out of the car yet, but I did see some rust traces coming from one of the caps....(A sure sign that the factory lube is long gone). I will pull the shaft out soon and drive around and see if the shutter goes away. BTW, does anyone know where I can get the shaft repaired or if anyone has a u-joint part number that I can buy to replace?

Thank you and God Bless!



#6

03-17-2008, 07:14 PM

JRL

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,063



Quote:

Originally Posted by **FE MAN**

*Thanks for the info.*

*I crawled under the car and only found 1 universal joint on the prop shaft. It is just before the carrier bearing assy (above the Catalytic converter). I did not pull the prop shaft out of the car yet, but I did see some rust traces coming from one of the caps....(A sure sign that the factory lube is long gone). I will pull the shaft out soon and drive around and see if the shutter goes away. BTW, does anyone know where I can get the shaft repaired or if anyone has a u-joint part number that I can buy to replace?*

*Thank you and God Bless!*

The one in the front is the replaceable one. The one in the middle is INSIDE the driveshaft (cannot be seen) and the rear joint is right before the viscous coupling at the tail end of the driveshaft



#7

03-23-2008, 04:02 PM

FE MAN

Junior Member

Join Date: Mar 2008

Location: CT

Posts: 7



I got a chance to pull the drive shaft off and indeed, the u-joint was toast. I matched up a precision number u-joint for \$12.95 and replaced the joint, tack welding the yoke once

installed to prevent it from coming out. NO PROBLEMS!  
Definitely beats paying ~\$1,000 for a replacement shaft!.

Thanks for the diagnosis!



#8

03-23-2008, 04:36 PM

[JRL](#) 

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,063



**Which** joint (front, middle, rear) and the PN please what you used



#9

03-24-2008, 04:02 PM

[FE MAN](#) 

Junior Member

Join Date: Mar 2008

Location: CT

Posts: 7



O.K.

First of all, I had to replace the u-joint that is in the middle of the car, under the sheetmetal x-member that has the carrier bear mount and the exhaust hanger mount. Here is what I used....I looked up in a Precision U-joint catalog and used #413 u-joint. It has a .945" (24mm) diameter cap with a "X" length of 2.490" (63.25mm).

I torched the old one off so as I did not damage the swedged/staked portions of both yokes....(Hint: I made a sheet metal heat shield that I fastened to the yoke to protect the rubber carrier bearing assy from the torch flame and heat. I also soaked a couple of rags with water and placed on the carrier bearing to keep it reasonably cool from the cutting torch heat).

Once the u-joint cut, I "popped in" the caps and proceeded to use a rotary file to remove the swedged/staked metal on one of each of the yoke holes. This allowed me to install the

new u-joint in and "butt" it up against the other 2 staked marks. Once seated, I double checked the depth on each side to make it centered within .010" then I took out my handy welder and tack welded 4 dot sized beads onto the yoke to keep the u-joint cap from coming out. Call this "D" for done.



#10

03-24-2008, 05:09 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,063



Well, you have talent, congrats. WAY too much for me (of most of us here) to handle plus

I assume you had the assy. balanced afterwards?

This is why us mere mortals buy new driveshafts.

[FE MAN](#)

Junior Member

Join Date: Mar 2008

Location: CT

Posts: 7

**About FE MAN**

Vehicle

99 XC V70

Location

CT

Occupation

Mechanical Engineer



Thank you for the compliment. However, when it comes to either having to spend ~\$1,000 on a driveshaft, vs 2 hours of work, I'll take the chance on trying to fix with an inexpensive u-joint. What was the worst thing that could happen??? (Have to replace the driveshaft????)

Anyhow, the reason why I spend the time on only removing the "staked burrs on only one of each of the yoke's holes was so that I could "Bottom out" the replacement joint onto the other yoke holes that I left the stakes in. It got me within a few thousands of an inch of being centered, thus not needing to rebalance the shaft. It has been put into service by a very discriminating wife and no vibrations whatsoever either at

## 80+ mph or 10 mph!

07-27-2009, 03:59 PM

[mikeori](#)  
Junior Member

Join Date: Mar 2008  
Posts: 15

### **v70 driveline noise?**

my 98 [awd](#) R  
has developed a  
"bad bearing"  
type noise that  
seems to be  
coming from  
under the front  
center of the  
console area. It  
is only noticable  
on slow  
acceleration/dec  
eleration, such  
as pulling away  
from (or up to a  
stop sign). Once  
a bit of speed is  
obtained (15  
mph or so), it  
seems to  
disappear. It is  
not front drive  
axles or bearings  
as they are  
recent  
replacements.  
Car has 130 k on  
odo. Any  
thoughts or  
suggestions  
would be  
appreciated.  
thanks,  
Mike  
Location:  
Posts: 30  
Member

[2](#)  
HYPERLINK  
"http://volvoforu  
ms.com/forum/ne  
wreply.php?  
do=newreply&p=  
172793"μ 07-27-  
2009, 10:26 PM



These [cars](#) are notorious for having drive shaft problems. The center bearing is probably shot. The only fix for this (that I know of) is to replace the drive shaft. Its around \$1000. Sometimes the drive shaft's front CV joint can cause the low-speed vibration. There is a service kit available to replace the front CV.

The best way to diagnose this problem is to remove the drive shaft and drive the car. If the noise/vibration goes away, you've found the problem.

quote

#3

07-28-2009, 03:04 PM

[mikeori](#) 

Junior Member

Join Date: Mar 2008

Posts: 15



thanks for the info - not really what I wanted to hear. any "tricks" or precautions on the driveshaft removal?

quote

#4

08-19-2009, 06:51 AM

[LPG Karl](#) 

Member

Join Date: Aug 2009

Posts: 46



I think he is referring to the angle drive that feeds power to the rear wheels.

mine failed at 190,000KMS which is close to the "normal" 185-200K's  
unfortunately when converted to miles your is on the money for a failure.

If you can get it out quickly, there is a guy on swedespeed that can fix the bearings for alot less than a replacement unit from volvo.

My advice -dont drive it until it is sorted, I was on a country drive and was forced to continue home as I had family on board and no one could even diagnose what was going wrong -trip was only 400KMS (~250miles) cost me \$2200 AUD to replace / exchange and my brother works for volvo spare parts!!!!.....

typically a bearing failure will present as a noise under accelleration or decellaration, if left unchecked will destroy the angle gears (like a little diff in the middle of the RHS

driveshaft)

If its an auto then it runs the same grunt as the T5 anyway and the [AWD system](#) only spits 10% of the grunt to the rear of the car anyway (if everything works) meaning for arguements sake 250HP flywheel less transmission losses =20-25HP going to the back, split between two rear wheels = waste of time.

My advice- get a "normal" T5 rhs drive shaft, throw away the prop shaft, viscous coupling, rear diff and rear drive shafts.

Your "R" just became a T5.

Aleviates the tyre wear problem with [AWD cars](#) (feathering the treads and requirement to swap front to back every 3000 miles {this is done to aleviate different wheel speed front to back which can cause angle drive and viscous coupling failure}).

Take it from me, these are nice cars but making them better by removing failure points is a winning (albeit unconventional) idea.

I wish you luck -bolts holding the angle drive to the box can be hard to remove (ie snap off) and the angle drive oil costs more than liquid gold (over here \$90 1L)

Karl

Thread: **[Replacing the Angle Gear - Getting Ready- Please Share Advice, Tips, Tricks, etc..](#)**

[Thread Tools](#)  
[Search Thread](#)  
[Display](#)

## 1. [NJGreenBudd](#)



Junior Member

Join Date

Jul 2008

Posts

726

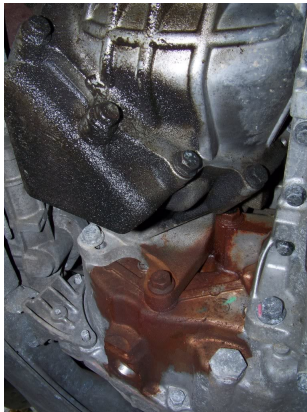
*Replacing the Angle Gear - Getting Ready- Please Share Advice, Tips, Tricks, etc..*

02-13-2010 11:19 AM [#1](#)

Okay fellas, I've had a slow weep from the Angle Gear (AG) since I bought the car with 28,000 miles on it about 4 years ago, up to 110,000 miles now a days. I have always just kept an eye on the leak and had it drained and refilled around 85,000 miles but it seems to be getting worse lately. Not only is it still weeping but I have been feeling some resistance when reversing the car with the wheels cut, plus I can notice a feint whine under the car at certain times. Sounds kinda like a ring and pinion wearing out.

So I've decided to go ahead and replace the AG, collar gear and trans seals on my own dime. I have sourced a very clean, low mileage AG (no weeping but will probably reseal as a precautionary measure) and will be ordering the new parts once I have the list complete. I am hoping to get some input from members who have done this repair before, what should I be expecting here? What should I be on the lookout for? Any helpful tidbits of knowledge would be much appreciated.

Here is what I am looking at under there right now, ugly to say the least. Arrgh!!



So far I have:  
Newer Angle Gear Unit

Looking to pickup:  
Sleeve (collar gear) - 9495034  
Seal for collar gear - 8636194  
RF axle seal (in transmission, not angle gear) - 8636195

## Angle Gear Seals AG Vent

What are the P/N's for all of the angle gear seals and new style breather vent?

And the resealing procedure instructions would be appreciated as well. I understand there needs to be a small chamfer added to the lip of one side of the case but not too clear on the specifics.

These are the only instructions I have so far:

### Removing the drive shaft

Press out the wheel spindle. Detach the drive shaft from the hub. Do not damage the drive shaft boot. Use a tensioner band to pull the spring strut backwards.

Remove the screws from the bearing cap for the drive shaft. Pull the drive shaft straight out.

Note! Do not pull the outer part of the shaft. Doing so could damage the axial stops in the joints.

### Removing the propeller shaft

Remove the front member from the body, exhaust pipe and three-way catalytic converter (TWC). Remove the brake pipe from the mountings in the member.

Remove the screws from the propeller shaft center bearing.

Slacken off screws from the support for the center bearing.

Marking the propeller shaft CV joint/flange

Mark the position of the propeller shaft CV joint/flange. See Replacing bevel gear pinion seal.

Press the drive shaft joints together as much as possible.

Remove the screws on left-hand side from the support for the center bearing.

Remove the shaft from the bevel gear.

Leave the end of the shaft resting against the anti-roll bar.

Note! Be careful. Do not damage the heated oxygen sensor (HO2S) or its cable.

### Removing bevel gear

Remove the 5 screws for the bevel gear. Pull the bevel gear straight out. Then turn it during removal.

(VADIS, 2005).

Thanks for your time with this,  
NJGB

[Reply With Quote](#) |

2. [S60inToronto](#)



Junior Member

Join Date

Jul 2007

Posts

500

02-13-2010 10:25 PM [#2](#)

Can't help but maybe check over in the R forum as there are always complaints about busted angle gears in there - especially the '04-05 MTs.

[Reply With Quote](#) |

3. [JonathanL](#)



AWD

Junior Member

Join Date

Mar 2009

Posts

326

*Re: (S60inToronto)*

02-14-2010 05:01 PM [#3](#)

Thats what my angle gear has looked like for years too.  
AWD works proper, get a hand pump put redline 75 90 i think it was in: angle, the AOC and rear diff. Its good your prepared but if its not shot dont fix it. 🌐 Good write up by the way i saved it for when the time comes

[Reply With Quote](#) |

4. [Mika](#)



Member

Join Date

Jun 2005

Location

San Diego, CA

Posts

2,060

*Re: Replacing the Angle Gear - Getting Ready- Please Share Advice, Tips, Tricks, etc.. (NJGreenBudd)*

02-14-2010 06:04 PM [#4](#)

Our XC's AG was weeping like that also. I filled it up with Mobil 1 gear oil and it has not leaked in 5k miles.

[www.turbobil.com](http://www.turbobil.com)

[Reply With Quote](#)

5. [NJGreenBudd](#)



Junior Member

Join Date

Jul 2008

Posts

726

*Re: Replacing the Angle Gear - Getting Ready- Please Share Advice, Tips, Tricks, etc.. (Mika)*

03-15-2010 02:43 AM [#5](#)

I went ahead and took this out today while I was adding a new downpipe.

Take the wheel off, remove the brakes and undo the shock. Take out the axle bolt and press out the axle from the hub.



Unbolt the center bearing and pull out the axle from the transmission.









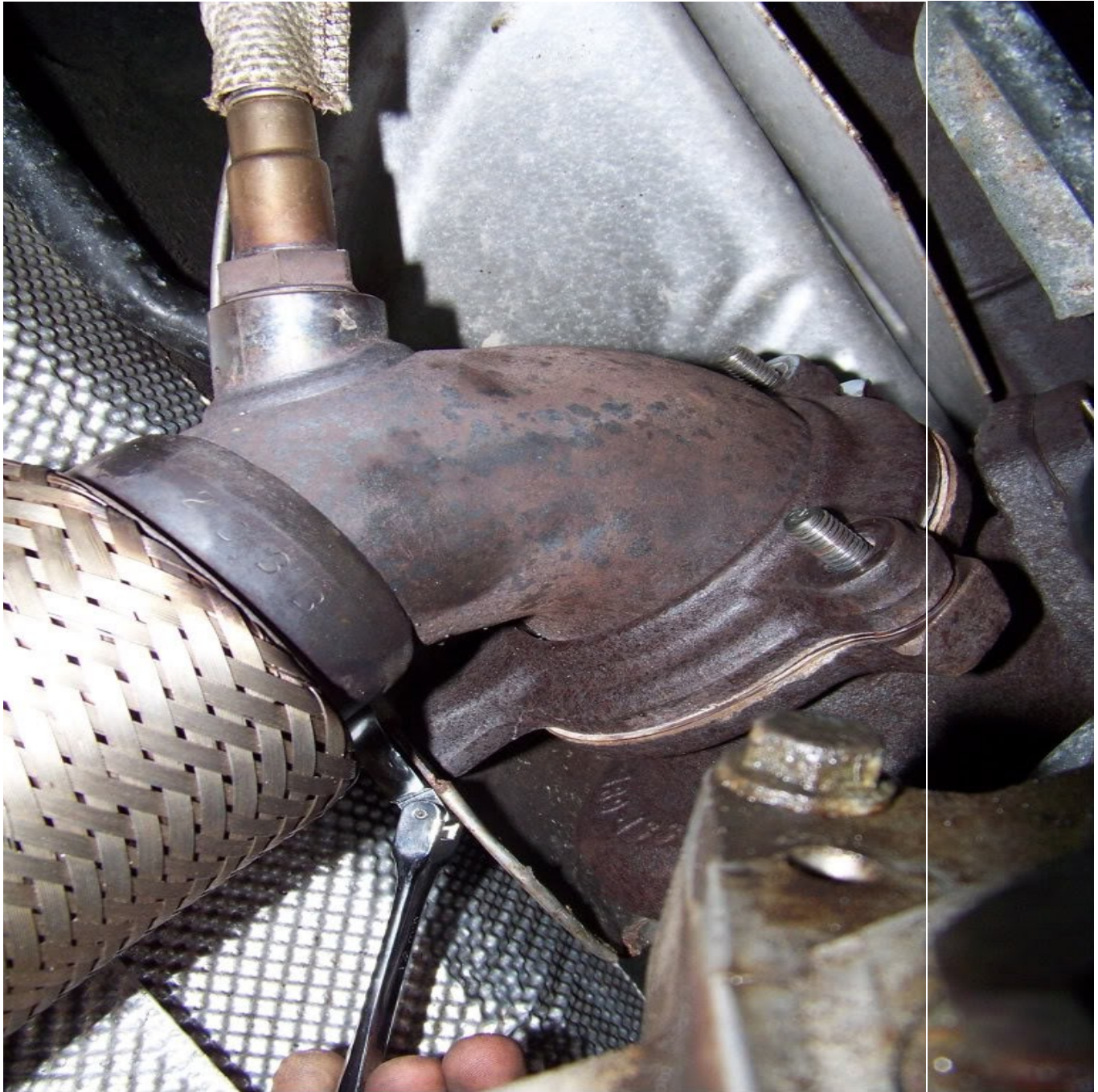
Axle as it sits in angle gear



Weeping angle gear

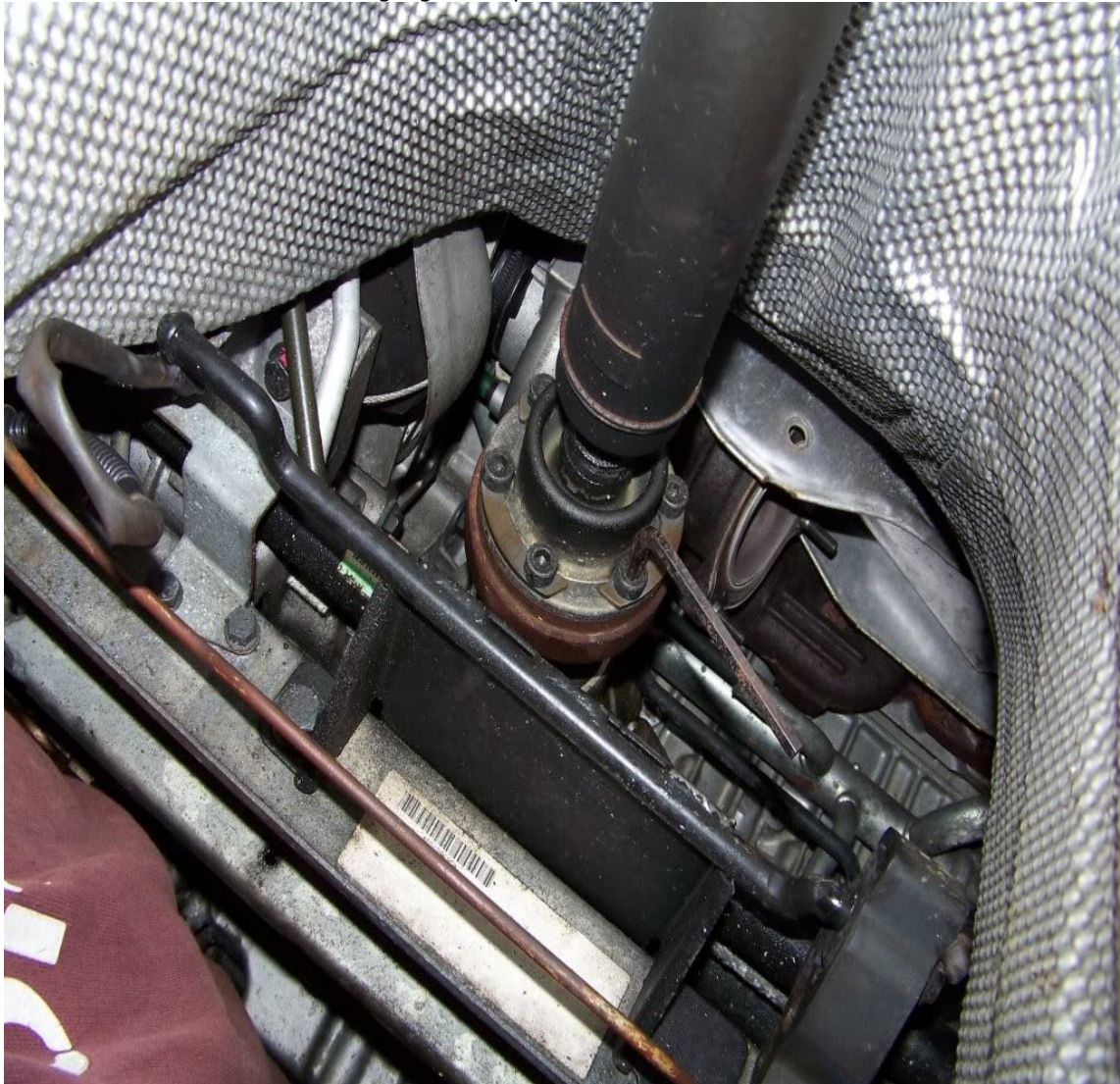


Remove exhaust

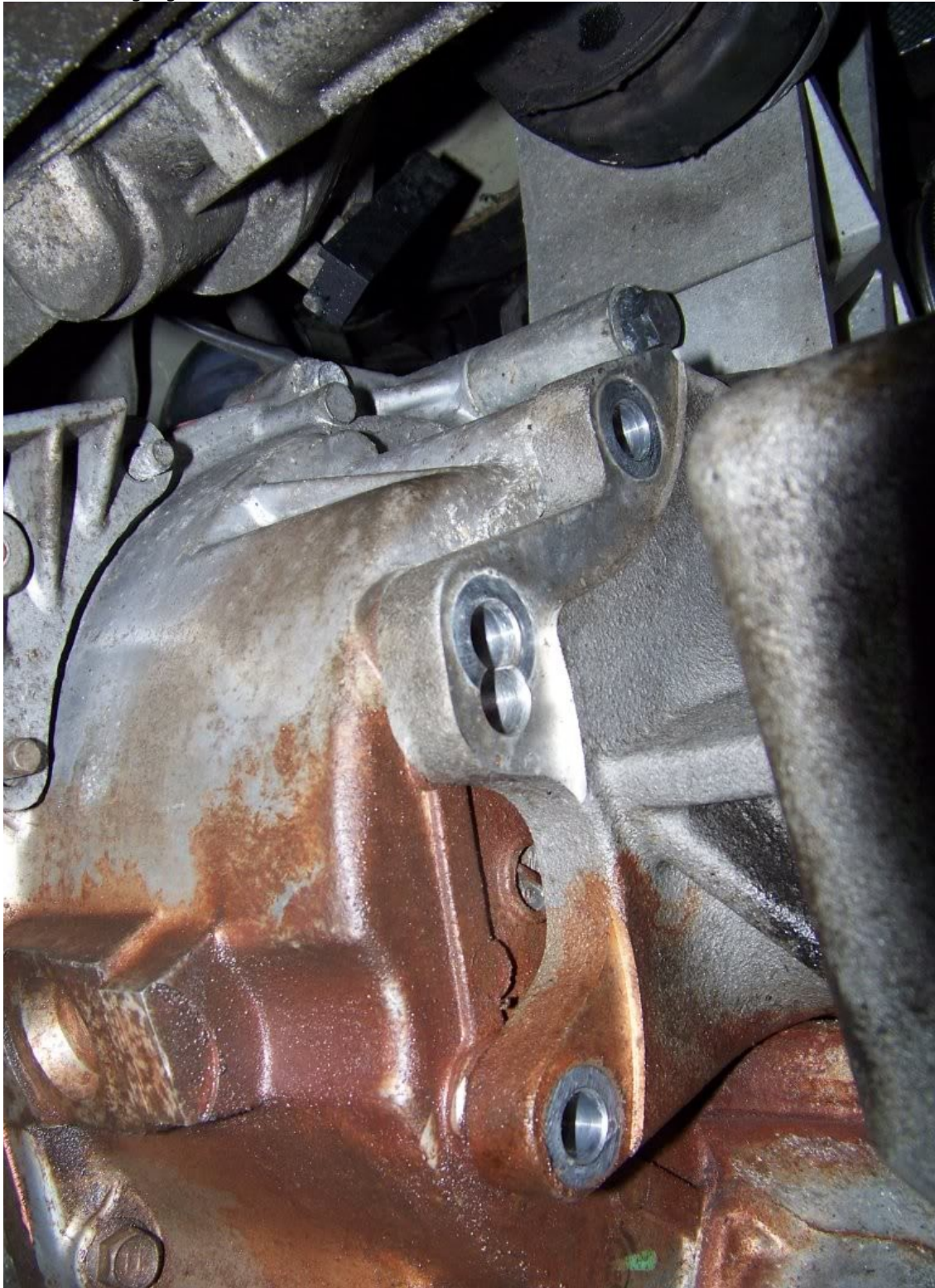




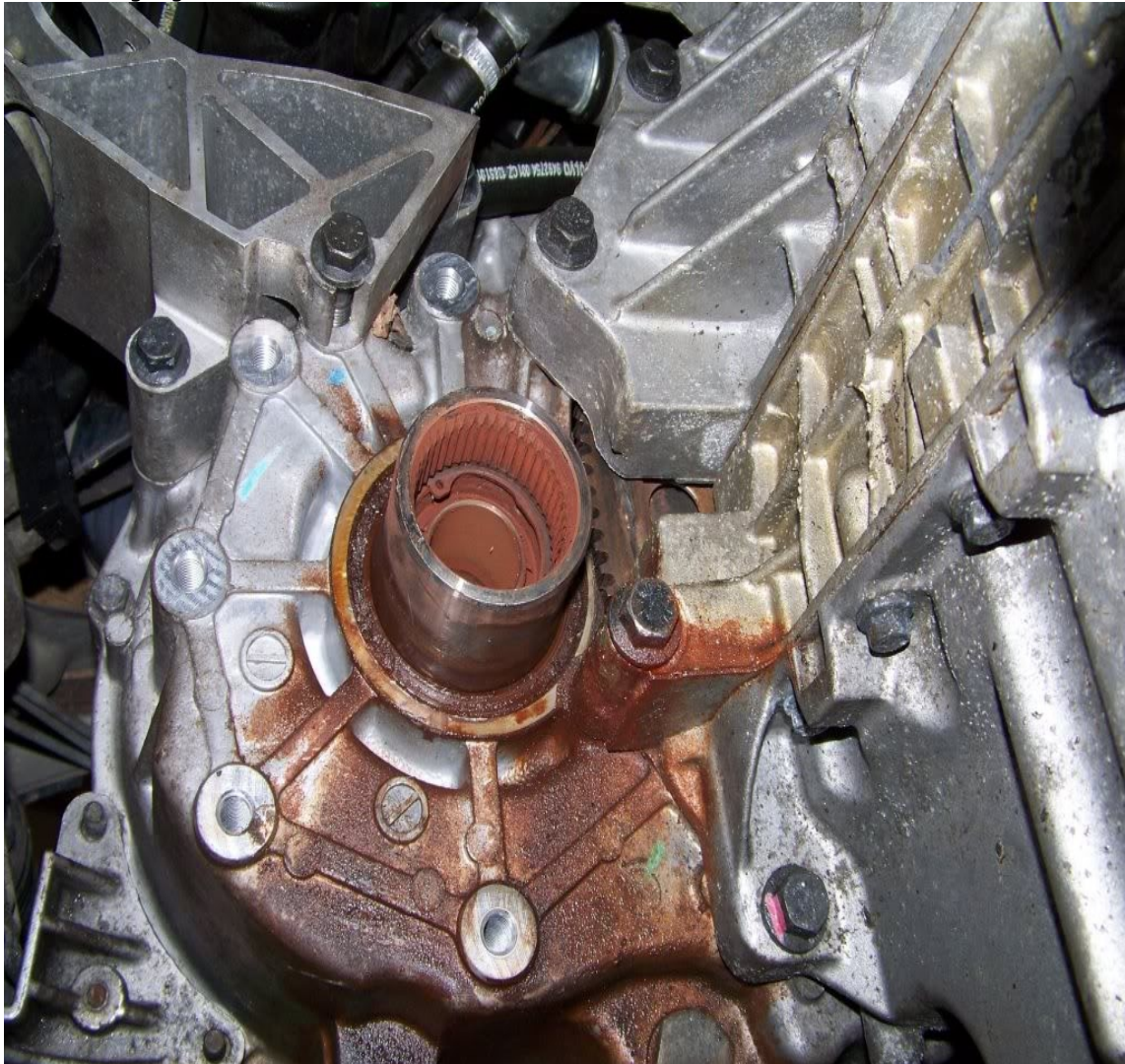
Unbolt the driveshaft from the angle gear output.



Unbolt the angle gear from the transmission.



Remove angle gear from transmission.



Newer and older angle gears.

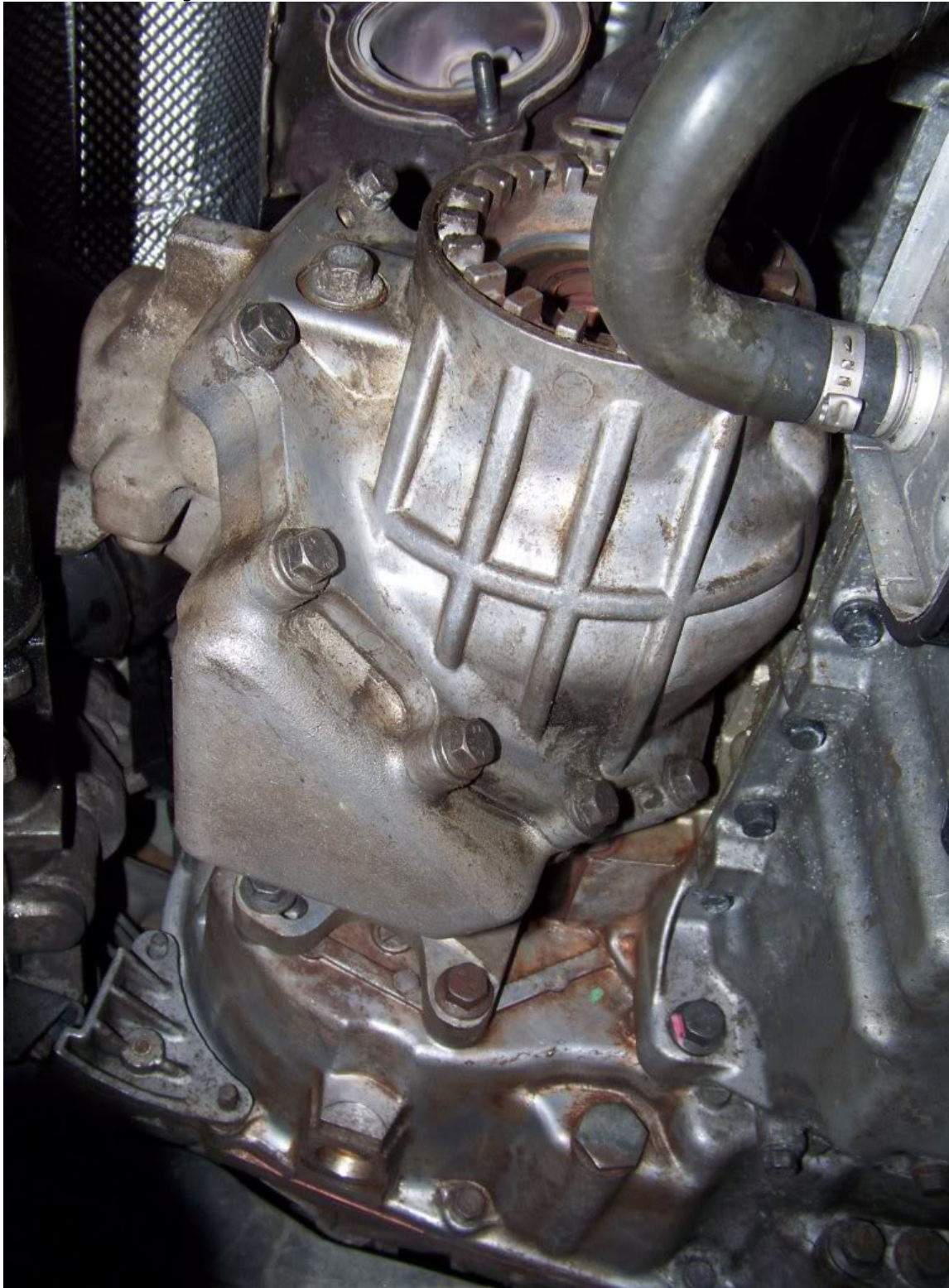


Sucked out the old fluid from the new angle gear and replaced with new gear oil.





Installed Newer Angle Gear



When I swap out the turbo in a few months I am going to replace the collar gear and trans seal at that point.

[Reply With Quote](#)

## How long can I drive my car with a bad driveshaft? (2000 V70 XC SE)

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 1 of 2

**1**

[2 Thread Tools](#)

[Display Modes](#)

#1

05-30-2010, 02:27 AM

[Prana34](#)

Junior Member

Join Date: Mar 2010

Location: New England

Posts: 13



### How long can I drive my car with a bad driveshaft? (2000 V70 XC SE)

I just spent over a thousand dollars less than a month ago on repairs and now my drive shaft is apparently bad. I'm not going to be able to afford to fix it for a couple weeks, but was wondering if I will do more damage/cause more problems by driving it? In the past week the vibration seems to have gotten a little worse so I'm worried.

Is there ever an end to the problems with these cars???? I've dumped so much money into it that I keep hoping at some point it will just be problem free for a little while... I'm losing hope.

Anyone have problems with the window switches? My rear driver's side window stopped working a while ago, I took the switch apart and cleaned it and it worked again for several months. It stopped working again and cleaning it didn't fix it so I bought a new used switch and now neither back window works. Does this sound like a switch problem or something else? Any suggestions?

Thanks-  
Robin



#2

05-30-2010, 05:38 AM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,066



I would remove it NOW and drive in FWD until you buy a new driveshaft.

Hurts nothing and you will be happy with the smoothness of the XC.

You need to buy a new (or used) LF master switch, that is the root of the problem (They all fail at some point)

and no, there's never an end.....



#3

05-30-2010, 06:51 AM



[ecbsykes](#)  
Senior Member

Join Date: Mar 2009  
Location: San Diego/Flagstaff  
Posts: 222



My advice: Don't bother fixing the AWD on first gen cars unless you have \$4000 you want to burn. I replaced my drive shaft after it broke and then was thanked by having the bevel gear take a dump. I just removed the shaft and have it in FWD now. Better mileage too!

If you are determined though, I have a drive shaft for a 2000 XC, low miles.

**Ed Sykes**

**2000 V70XC 2.4L Turbo - Emerald Green -142,000 miles**

**United States Air Force ROTC**

**Northern Arizona University**



#4

05-30-2010, 03:34 PM

[knucklebuster](#)  
Senior Member

Join Date: Feb 2007  
Location: Ottawa, Canada  
Posts: 123



AG is ok so far on mine . . . just had the seals done (while the trans was being replaced ! !) and they inspected it - looked ok.  
BUT - I have replaced the prop shaft twice now. I love 4WD, especially when the snow starts. One of the big plusses with these cars. However, I'm asked once in a while if it's still 4wd, as though most people don't bother keeping it up. Quite frankly, I'm frustrated at buying (un-)rebuilt shafts. Might do this one more time though . . .

2WD is always an option. My gut feeling is remove it if it's vibrating a lot. It will affect other drivetrain parts even if not measurable right now.



BTW - 25 minute job - by my recollection, 15mm wrench and 6mm hex with extension - you must use a flex for this

or roll the car to get access to all the bolts. (15? yup I think so . . .)

As fun to fix as they are to drive. 🚗

*Last edited by knucklebuster; 05-30-2010 at 03:37 PM. Reason: add info*



#5

05-30-2010, 03:49 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,066



Colorado Driveshaft  
About \$450 (or less) for a good rebuilt propshaft



#6

05-31-2010, 12:52 AM

[Prana34](#)

Junior Member

Join Date: Mar 2010

Location: New England

Posts: 13



Thanks everyone! I wish I could remove it myself, but not that mechanically inclined nor do I have the tools. I'm going to look into Colorado driveshaft, thanks JRL.



#7

06-07-2010, 02:18 PM

[almostarctic](#)

Member

Join Date: Nov 2008

Location: Northern Canada

Posts: 48



I have a 99v70xc (180K km) with a Prop driveshaft with 100K km.

We're going on a roadtrip this summer and I'm thinking of removing the driveshaft since it is summertime and also so that it doesn't crap out on me while on the road. Does anything need to be inserted in place (such as towards the angle gear) so that dust and grime doesn't get into the housings of the angle gear since the prop driveshaft is absent?

Cal

---

Keep Waggin' the wagon!

1999 V70XC Moondust - Stock everything (except everything has been changed at

least once in the life of the car) 😞  
2008 C30 T5 Cosmic White Manual - Fun fun fun 😄

1983 - Volvo DL wagon - RIP - Volvo saved my life.



*Last edited by almostarctic; 06-07-2010 at 02:19 PM. Reason: grammar*



#8

06-07-2010, 02:31 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,066



They don't "*just go*" but if you want to, (remove it) nothing is replaced.

The angle gear stays as does the viscous coupling.

What you should do is (after you mark them) replace the bolts, that's the best way to keep anything cruddy out, but you really don't have to do that either



#9

06-07-2010, 04:12 PM

[mesaAZ2000XC](#)

Member

Join Date: Mar 2010

Location: Mesa, AZ

Posts: 55



I am also going to take a 4500 mile trip here in a few weeks, am considering taking the driveshaft out to be on the safe side. I am at 124K and get a singing noise from the center of the car at 60-65 mph, goes away at 70+. Pretty sure that is the center support bearing.



#10

06-07-2010, 07:24 PM

[JRL](#)

Senior Member

Join Date: Apr 2003

Location: Devon PA

Posts: 4,066



Could also be the bevel gear



07-21-2010, 02:49 PM

[johnngx](#)

Junior Member

Join Date: Jul 2010

Location: Colorado

Posts: 2



I had the dreaded shudder. Removed the prop shaft, and the shudder is gone. So at least it's apparently not the transmission 😊

But there is only very minor binding in the rear CV joint - all other joints feel perfect. I don't think the prop shaft is bad (but not certain).

Is there any way to test whether the bevel gear and/or viscous coupling are bad?



## Bevel Gear Question

## Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 1 of 3

**1**

[2](#)

[Thread](#)

[Tools](#)



[Display Modes](#) ▼

#[1](#)

11-05-2004, 08:48 AM



[philosophicaldreamer](#)   
VolvoXC.com Supporter

Join Date: Oct 2004  
Location: Nashville, TN, U.S.A.  
Posts: 568



### Bevel Gear Question

Dear Fellow Travelers:

I need some enlightenment. I have a 2001XC70. How often do you change oil in the bevel gear case? Is this something that I can do on my own? Or do I have to go to a dealer? how much do they charge for such a change? 🤔

Any info is going to be deeply appreciated?

Ta-ta, j.

Second gen., Nautical Blue XC70Volvo: "Anything else just isn't up to it" and Wife's Volvo S70: "In manual Transmission She Trusts" 🤔



#[2](#)

11-05-2004, 09:19 AM



[littlewaywelt](#)   
VolvoXC.com Supporter

Join Date: Sep 2002  
Location: Silver Spring, MD  
Posts: 2,123



You can go to the [volvocars.us](#) website and look at documentation for your vehicle on line (service schedules, warranty info, manuals, etc.). It's sort of a virtual glove box. It used to only be accessible with a VIN number, user id and password, but now anyone can access it.

Click on For Owners on the right hand side.

You should be able to get an answer there re when it gets done mileage-wise.

---

**2005 XC70 Barents Blue & Taupe leather**, *deliv. 12/04, built 11/04*

Prem / Conv / Climate / DSTC / NAV / 650 / Sirius / 60/40 / 3rd Row / Boosters / Thule / Weathertech mats / Mud Flaps / 46% Tint / Nokian WR SUVs

*serviced by Red Bank Volvo, NJ & Volvo Westport, CT*

2001 V70XC~someone else's problem vehicle now

[VolvoClub ofAmerica](#)



#3

11-05-2004, 01:16 PM



[philosophicaldreamer](#)   
VolvoXC.com Supporter

Join Date: Oct 2004  
Location: Nashville, TN, U.S.A.  
Posts: 568



Quote:

Originally Posted by **littlewaywelt**

*You can go to the [volvocars.us](#) website and look at documentation for your vehicle on line (service schedules, warranty info, manuals, etc.). It's sort of a virtual glove box. It used to only be accessible with a VIN number, user id and password, but now anyone can access it.*

*Click on For Owners on the right hand side.*

*You should be able to get an answer there re when it gets done mileage-wise.*

Thanks for the info, but for some reason I am unable to locate this information. Either I am blind or the Volvo manual does not provide this information.

It is probably I again being dumb like a rock.

Ta-ta, j.

---

Second gen., Nautical Blue XC70Volvo: "Anything else just isn't up to it" and

Wife's Volvo S70: "In manual Transmission She Trusts" 



#4

11-05-2004, 01:34 PM



[littlewaywelt](#)  
VolvoXC.com Supporter

Join Date: Sep 2002  
Location: Silver Spring, MD  
Posts: 2,123



Quote:

Originally Posted by **philosophicaldreamer**

*Thanks for the info, but for some reason I am unable to locate this information.  
Either I am blind or the Volvo manual does not provide this information.*

*It is probably I again being dumb like a rock.  
Ta-ta, j.*

I couldn't locate it there either.  
Give your dealer a call.

EDIT- the 2005 lists an inspection every 15k miles of the bevel gear, but it doesn't say anything about fluid replacements.

---

**2005 XC70 Barents Blue & Taupe leather**, deliv. 12/04, built 11/04

Prem / Conv / Climate / DSTC / NAV / 650 / Sirius / 60/40 / 3rd Row / Boosters / Thule / Weathertech mats / Mud Flaps / 46% Tint / Nokian WR SUVs

served by Red Bank Volvo, NJ & Volvo Westport, CT

2001 V70XC~someone else's problem vehicle now

[VolvoClub ofAmerica](#)

Last edited by littlewaywelt; 11-05-2004 at 01:46 PM.



#5

11-05-2004, 03:06 PM



[Swamped](#)  
VolvoXC.com Supporter

Join Date: Aug 2002  
Location: Baton Rouge, LA  
Posts: 103



Try <http://www.volvocars.us/VolvoOwnership/OwnersCircle/>  
Never mind, that doesn't seem to work anymore....

2002 V70XC Glacier White --> 2004 XC70 Ice White



#6

11-08-2004, 06:18 AM



[littlewaywelt](#)  
VolvoXC.com Supporter

Join Date: Sep 2002  
Location: Silver Spring, MD  
Posts: 2,123



Quote:

Originally Posted by **Swamped**

Try <http://www.volvocars.us/VolvoOwnership/OwnersCircle/>  
Never mind, that doesn't seem to work anymore....

The owners circle thing is gone. It's all in a public section now, no longer requiring a VIN, user id or password.

**2005 XC70 Barents Blue & Taupe leather**, deliv. 12/04, built 11/04  
Prem / Conv / Climate / DSTC / NAV / 650 / Sirius / 60/40 / 3rd Row / Boosters / Thule / Weathertech mats /  
Mud Flaps / 46% Tint / Nokian WR SUVs  
served by Red Bank Volvo, NJ & Volvo Westport, CT  
2001 V70XC~someone else's problem vehicle now  
[VolvoClub ofAmerica](#)



#7  
04-08-2005, 03:35 PM



[nwxc70](#)  
Senior Member

Join Date: Feb 2005  
Location: Wilmington, DE  
Posts: 115

**My bevel gear is being replaced...**

I've got my baby at the dealer for a last bit of warranty issues as I am nearing 50,000 miles and the end of my warranty. I had asked them to check the wheel bearings as I'd been hearing some extra noise the past few months, which sounded like excessive road noise or the early stages of bearing howl. I'd read on this forum that wheel bearings were one of those "issues" and wanted to go for some new improved bearings under warranty. If not the bearings I had a suspicion that it was the Pirelli S/T tires which are still on the car with 5000+ miles of tread life (unbelievable to most I know). They're also replacing some rubber stripping along the driver's window and a few other minor things.

Well, just got the call to keep the loaner (an '05 V50) over the weekend as they've found that they need to **replace** the bevel gear and they didn't receive the part today as expected.

Sure am glad they caught that one!

2001 V70xc, Ashgold/  
Sand, Premium Pkg



#8  
04-10-2005, 08:59 AM

[jbl](#)  
Member

Join Date: Feb 2005  
Location: Sweden  
Posts: 70

I emailed Haldex and they told me that it is life time filled.

But this only goes on newer XC's from 2003.

Dont know anything about the older system.



#9

04-10-2005, 07:26 PM



[dlr97](#)

Senior Member

Join Date: May 2004  
Location: Redding, CA, USA  
Posts: 334



Quote:

Originally Posted by **jbl**

*I emailed Haldex and they told me that it is life time filled.  
But this only goes on newer XC's from 2003.*

*Dont know anything about the older system.*

The bevel gear is at the transaxle (in front); it is not part of the Haldex or the previous viscous AWD device. It connects the transaxle to the rear driveshaft. On both my previous 2000 V70XC and current 2004 XC70 there is no mention of changing the bevel gear lubricant (but it should be checked, I believe at 15K intervals).



#10

04-14-2005, 07:25 AM



[nlemerise](#)

Member

Join Date: Feb 2005  
Location: Middle-of-Nowhere, NV  
Posts: 71



FWIW...I went by Volvo today and spoke to service manager...I asked him about bevel gear service/maintenance, what exactly do they do... he said they do it at 60K miles...drill out a bolt in the case, drain the housing, replace with clean Volvo Transmission Oil 11 61 648, and then install new drain plug. Not wanting to drill out the bolt in the bevel gear housing, I bought a \$10 suction pump at Harbor Freight (known in my house as The Dark Side) and ordered the oil - \$23 per liter! I'll just draw all the old gear out and pump in clean oil.

Bevel Gear Question

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)

[Display Modes](#)

#11

04-14-2005, 08:29 AM



Member

Join Date: Feb 2005  
Location: Sweden  
Posts: 70

Please reply if it was easy to get the oil out by your method



#12

04-21-2005, 03:16 PM

[nlemerise](#)  
MemberJoin Date: Feb 2005  
Location: Middle-of-Nowhere, NV  
Posts: 71

**This job was extremely easy and cheap!**

**Here are the details:**

I returned the cheap siphon pump and got a better one (mityvac by Lincoln Tools, see attached picture). The reason I bought this pump is that it both sucks fluid out using a hand-pumped vacuum and it also pumps fluid in. This is important in that there is no room to pour gear oil in the fill-hole of the bevel gear housing.

I placed the car (2000 V70XC SE) on ramps, slid under it and removed the 13mm bevel gear fill-plug (part #6 on the attached blow-up of bevel gear housing. Have a pan/rag handy...the gear oil will begin to dribble out when you remove the plug. I then fished the hose for the mityvac pump into the bevel gear housing. This can be a little tricky - you need to jiggle the hose a bit to get it down to the bottom of the housing (roughly 6 inches or so). Then I pumped the old gear oil out. The mityvac pump has a measuring/collection cup and I measured 0.75 liter of dark brown oil. The bevel gear oil has never been changed in my car (72K miles) but there were no metallic materials or any debris in the old gear oil 🇺🇸.

I then blew the hoses out for the mityvac with compressed air to remove the residual old gear oil out. Then rearranged the hoses on the pump, placed one hose in the 1 liter **Volvo Transmission Oil (part # 1161648)** bottle and the other hose in the fill-hole of the bevel gear housing. Then I pumped fluid in the housing until gear oil began dribbling out of the hole. Put the plug back in the housing and checked the gear oil bottle and there was 0.25 liter of oil left (just to be sure I put the same amount in as I took out).

So the job costs \$23 for the Volvo Transmission Oil and \$27 for the mityvac pump...total of \$50. I feel the pump has paid for itself already. I will be using it to do my yearly brake fluid change, power steering fluid change, and differential oil

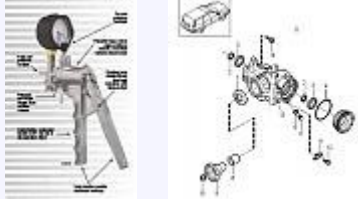
change. Hope this helps...good luck!

4/23/2005 Addendum

For a step-by-step description with pictures, download this file:

<http://home.ripway.com/2005-4/294125/V70XCBevelGear.pdf>

Attached Thumbnails



Last edited by nlemerise; 04-23-2005 at 03:52 PM.



#13

04-22-2005, 07:54 AM

[jmoser](#)

Senior Member

Join Date: Dec 2002  
Posts: 249



Excellent report - thanks. This is next on the list with the ATF flush.

Best not to use the same Mighty-Vac for oil and brake fluid.

Any petroleum contamination can really screw up your braking system, lots of expensive replacement parts.

Good idea but spring for an extra Vac, still a cheap investment and DIY savings galore.



#14

04-22-2005, 08:03 AM

[babalu87](#)

Senior Member

Join Date: Mar 2005  
Location: Massachusetts  
Posts: 143



Quote:

Originally Posted by **nlemerise**  
***This job was extremely easy and cheap!***

***Here are the details:***

*I returned the cheap siphon pump and got a better one (mityvac by Lincoln Tools, see attached picture). The reason I bought this pump is that it both sucks fluid out using a hand-pumped vacuum and it also pumps fluid in. This is important in that there is no room to pour gear oil in the fill-hole of the bevel gear housing.*

*I placed the car (2000 V70XC SE) on ramps, slid under it and removed the 13mm bevel gear fill-plug (part #6 on the attached blow-up of bevel gear housing. Have a pan/rag handy...the gear oil will begin to dribble out when you remove the plug. I then fished the hose for the mityvac pump into the bevel gear housing. This can be a little tricky - you need to jiggle the hose a bit to get it down to the bottom of the housing (roughly 6 inches or so). Then I pumped the old gear oil out. The mityvac pump has a measuring/collection cup and I measured 0.75 liter of dark brown oil. The bevel gear oil has never been changed in my car (72K miles) but there were no metallic materials or any debris in the old gear oil 🇺🇸.*

*I then blew the hoses out for the mityvac with compressed air to remove the residual old gear oil out. Then rearranged the hoses on the pump, placed one hose in the 1 liter **Volvo Transmission Oil (part # 1161648)** bottle and the other hose in the fill-hole of the bevel gear housing. Then I pumped fluid in the housing until gear oil began dribbling out of the hole. Put the plug back in the housing and checked the gear oil bottle and there was 0.25 liter of oil left (just to be sure I put the same amount in as I took out).*

*So the job costs \$23 for the Volvo Transmission Oil and \$27 for the mityvac pump...total of \$50. I feel the pump has paid for itself already. I will be using it to do my yearly brake fluid change, power steering fluid change, and differential oil change. Hope this helps...good luck!*

Great post!

Volvo way too expensive transmission oil = Mobil ATF 3309  
There is a post with info on where to buy.

EDIT:

Where did you purchase the Mityvac?  
\$27 sounds better than the \$37 I've seen.

---

2001 XC Java

1994 Dodge Dakota 4WD 5 speed 305,000 RIP 🙄

2006 Toyota Tundra SR5 crew cab

*Last edited by babalu87; 04-22-2005 at 08:09 AM.*



#15

04-22-2005, 08:35 AM

jbl  
Member

Join Date: Feb 2005  
Location: Sweden  
Posts: 70



Excellent description 🇺🇸



#16

04-23-2005, 06:51 AM



[nlemerise](#)  
Member

Join Date: Feb 2005  
Location: Middle-of-Nowhere, NV  
Posts: 71



I got the mityvac at Harbor Freight, right next to the cheap siphon pump in the automotive section.



#17

04-23-2005, 07:10 AM



[nlemerise](#)  
Member

Join Date: Feb 2005  
Location: Middle-of-Nowhere, NV  
Posts: 71



*Volvo way too expensive transmission oil = Mobil ATF 3309  
There is a post with info on where to buy.*

NOTE: I don't want to cause confusion, but I am confused . So I have to ask a few questions.

Volvo Transmission Fluid #1161648 is the same as Mobil ATF 3309?

Do they use this same fluid (#1161648) in the automatic transmission of some Volvo transmissions?

I ask this because I found the earlier post on the Mobil ATF and it sounds like some folks used it for the auto transmission flush fluid...I guess those transmissions must be considerably different than the AW42AWD in my XC...the oil from Volvo (1161648) had a viscosity that was much too high to use in the transmission. When I flushed my tranny I use Chevron ATF which met the spec given for the AW42AWD transmission.



#18

03-13-2007, 10:07 PM

[Ag04XC](#)  
Junior Member

Join Date: Mar 2007  
Location: Seattle  
Posts: 20



Quote:

Originally Posted by [nwxc70](#)   
*I've got my baby at the dealer for a last bit of warranty issues as I am nearing 50,000 miles and the end of my warranty. I had asked them to check the wheel*

*bearings as I'd been hearing some extra noise the past few months, which sounded like excessive road noise or the early stages of bearing howl. I'd read on this forum that wheel bearings were one of those "issues" and wanted to go for some new improved bearings under warranty. If not the bearings I had a suspicion that it was the Pirelli S/T tires which are still on the car with 5000+ miles of tread life (unbelievable to most I know). They're also replacing some rubber stripping along the driver's window and a few other minor things.*

*Well, just got the call to keep the loaner (an '05 V50) over the weekend as they've found that they need to **replace** the bevel gear and they didn't receive the part today as expected.*

*Sure am glad they caught that one!*

I've got 3mo and 10k left on my warranty (just bought the car). Is it reasonable to think that the Volvo dealers will honestly root out potential issues and fix them under warranty, or are they more likely to let these issues (assuming there's no safety issue) ride til you get to pay for them?

I'm keeping my fingers crossed that my new xc doesn't turn into a money pit. My previous Volvo, and 87, got to the point to where I had to let her go. Every time I took the car in for something, they would consistently come back with a list of 10 new issues. I fixed the critical problems and let the other stuff slide. I couldn't afford the car in the end.

Might I also ask how one checks the bevel gear lube? I apologize if I missed it somewhere in the mix here.

Thanks. Eric

*Last edited by Ag04XC; 03-13-2007 at 10:15 PM.*



#19

03-14-2007, 06:14 PM



**MoeB**  
Senior Member

Join Date: Oct 2006  
Location: Nashville, TN  
Posts: 710



Quote:

Originally Posted by **Ag04XC**

*I've got 3mo and 10k left on my warranty (just bought the car). Is it reasonable to think that the Volvo dealers will honestly root out potential issues and fix them under warranty, or are they more likely to let these issues (assuming there's no safety issue) ride til you get to pay for them?*

That's probably highly variable, depending on competence & honesty of a given

dealership.

Quote:

Im keeping my fingers crossed that my new xc doesnt turn into a money pit.

At some point I think most Volvos probably cost mucho \$\$ to maintain. Just look at the relative cost of parts.

Quote:

Might I also ask how one checks the bevel gear lube?

I think Volvo's spec is to fill it up to the fill opening, then remove 100 ml, or something like that.

---

2001 Volvo V70XC

Venitian Red/Beige

Cold Weather/Touring/Premium packages

08/01 Build Date



#20

03-14-2007, 07:22 PM

[Ag04XC](#)

Junior Member

Join Date: Mar 2007

Location: Seattle

Posts: 20



Thanks Moe. Im planning on getting the extended warranty. Im going to check into how long I can wait, to maximize, and probably take the car in for service prior to the original warranty expiration and see what I can get covered, if I need anything. Thanks for the support.

Eric

## Bevel Gear Question

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 3 of 3

[< 1 Thread Tools](#)

[Display Modes](#)

#21

03-14-2007, 11:01 PM

[Ag04XC](#)

Junior Member

Join Date: Mar 2007

Location: Seattle

Posts: 20



Upon rereading this thread, Im finding myself a bit confused regarding the bevel gear fluid change, and perhaps I need not worry about it at all, Im not sure. Early in the thread someone mentions that 03XC's+ do not need a fluid change EVER, just

"check" the bevel gear. A bit later, a helpful gentleman goes into great (and helpful to some, I'm sure) detail regarding his experience changing the fluid in his 2000XC. Is this not a 01+ forum? The pdf of the procedure in his post and the resource guide provided by this site is for 98-2000 XC's. Do I need to change my fluid or no? If so, does the detailed instructions of the pdf apply to my 04? Thanks to anyone who can clear this up for me.



#22

03-15-2007, 06:02 AM



**MoeB**  
Senior Member

Join Date: Oct 2006  
Location: Nashville, TN  
Posts: 710



All fluids deteriorate over time from contamination, shearing, heat, and parts wear. Gear oil deteriorates slower than most other auto fluids, but it still deteriorates. The manual's recommendation to "check" the fluid does not by definition supercede the need to "replace" the fluid. To my knowledge, nowhere in the manual does it say anything about "never change the fluid," but someone correct me if I'm wrong.

In my opinion, the word "check" is taken for granted by a lot of people who think it only means "check fluid level." To my mind, "check" also means to look at the color, smell it, and if there's a lot of use on the fluid, send a sample to a lab for analysis. On the other hand, since you can replace the bevel gear oil for about \$10, you can remove all doubt and just change it. Cheap and easy insurance.

---

2001 Volvo V70XC  
Venitian Red/Beige  
Cold Weather/Touring/Premium packages  
08/01 Build Date



#23

03-15-2007, 07:13 AM



**volvoshad**  
Senior Member

Join Date: Jun 2006  
Location: Pittsburgh, Pa, USA  
Posts: 260



Quote:

Originally Posted by **MoeB**

*All fluids deteriorate over time from contamination, shearing, heat, and parts wear. Gear oil deteriorates slower than most other auto fluids, but it still deteriorates. The manual's recommendation to "check" the fluid does not by definition supercede the need to "replace" the fluid. To my knowledge, nowhere in the manual does it say anything about "never change the fluid," but someone correct me if I'm wrong.*

*In my opinion, the word "check" is taken for granted by a lot of people who think it only means "check fluid level." To my mind, "check" also means to look at the*

*color, smell it, and if there's a lot of use on the fluid, send a sample to a lab for analysis. On the other hand, since you can replace the bevel gear oil for about \$10, you can remove all doubt and just change it. Cheap and easy insurance.*

Agree with MoeB 🤖 . Changing the bevel gear fluid can easily be done at the time of an oil change, and a novice can have it done in 30 min or less. I used Mobil Synthetic gear oil. It meets the spec, costs only \$10, and comes in a handy squeeze bottle so that you don't have to pump it in.

Ag04XC, the procedure for '01 and newer P2 vehicles is the same as the older cars.

2004 XC70 43K Silver over Graphite, Premium and Cold Weather packages.

2001 V70 XC, 93K, 08/01 build in Torslanda, Sweden, stock except for K&N. Gone but not forgotten.

1995 850 Turbo - great ride with 225K, *not mine any more* 🙄

2004 XC90 - it's gone

1993 850 GLT - not really missed

1986 GMC Suburban 2500, 454 V8 - for pulling *really* heavy things. 🇺🇸

**VCOA**



#24

03-15-2007, 11:14 AM

**Ag04XC** 🤖  
Junior Member

Join Date: Mar 2007  
Location: Seattle  
Posts: 20



Quote:

Originally Posted by **volvoshad** ➤

*Agree with MoeB 🤖 . Changing the bevel gear fluid can easily be done at the time of an oil change, and a novice can have it done in 30 min or less. I used Mobil Synthetic gear oil. It meets the spec, costs only \$10, and comes in a handy squeeze bottle so that you don't have to pump it in.*

*Ag04XC, the procedure for '01 and newer P2 vehicles is the same as the older cars.*

Thanks fellas. Guess Ill start looking for a Mityvac.

**View Full Version :** [Ahh, the angle gear....](#)

**tranmkp**

11-29-2006, 02:15 PM

Anyone intimate with the AG? Car does not make a sound now. Did for a while. Quiet now. Fluid level in AG was very low. Burnt smell. What that tells me is that

1. bad seal would cause fluid to get low, not necessarily failures with VC/shaft/tire issues.
2. Low fluid would mean that temp in AG would be high.

But this this mean that the gear needs to be replaced? As I understand it is a ring and pinion setup. I cant think of a ring and pinion setup to fail unless it is run hot until the point of failure. Seems the AG case can be refilled and all should be well no? I can tap it out and put in a tem guage and watch happens.

**JRL**

11-29-2006, 10:13 PM

11-29-2006, 10:22 PM

They can be resealed

yes they can - however, is the gear bad now after running hot? Has it lost its temper? will it fail? How do you determine?

**coolwhipdefuser**

11-30-2006, 01:54 PM

I kind of second that last question, how do you determine if the AG has gone bad or not? I do not often drive in conditions where my AWD is needed, so I cannot easily determine whether or not it works.

Just got off the phone with a close friend who is a mechanic I trust - knows his stuff. More a Benz and BMW guy but knows AWD. He told ne that the VC has MORE than enough play to take up small differences in tire size. That the tire size and angle gear failure is a lot of hooey. That the real cause of AG failure is lack of lubrication. There are three seal on the AG, any one can weep. Just checked mine - low -burn smell. NO, you can loos the temper on gears. Bearings will fail first. Put a temp sensor in it, reseal and refill. Dont want to put a sensor in? Then always check the level of lube.

He told me that we are needlessly stressing ourselves out...

**coolwhipdefuser**

11-30-2006, 02:49 PM

He told me that we are needlessly stressing ourselves out...

Thats good to know.

**JRL**

11-30-2006, 03:59 PM

Can't answer that but if you reseal and (of course) put new fluid in and it's quiet, it has a good chance of staying that was.

I will be at the dealer tomorrow and will ask my mechanic that same question so look for an answer tomorrow night

**Greybeard**

12-01-2006, 12:22 PM

So how do you reseal the angle gear. Just tighten the bolts? I have a 2000 XC-SE and just had the angle gear replaced last month, and now it's dripping fluid again. I'm having new tires put on the car today. Hopefully that helps. I'm ready to take matters into my own hands, but without a service manual, I'm shooting in the dark.

If you replaced the AG and its leaking a month later then you have a warranty issue with Volvo. Something is not right if the seals are leaking that quickly. That part has a one year warranty.

**Greybeard**

12-01-2006, 08:40 PM

tranmkp:

In your post above, you said that there are three seals on the AG. Can you direct me to a site that would have a picture of the AG housing and where the seals are. I just hate that I can't get a service manual for this car. I'm used to being able to look at a manual and at least figuring out what's wrong, even if I can't fix it.

And you're right, I have a one year warranty. I'm going to take the car to the dealer, which is 2 hours away, and get them to check the AG for me.

Thanks for any help you can give re: the diagram of the AG.

Call the parts dept of the dealer (any dealer, I call Boston Volvo sometimes even though I live in Texas.)

They can fax you a diagram from the Volvo system so you can see the seals...

**Greybeard**

12-02-2006, 07:49 AM

Thanks tranmkp. I'll give that a try. Why in the heck doesn't Volvo publish a decent service manual on a car that is 7 years old. (mine's a 2000)? Even Harley Davidson, which is the other great stealership on planet Earth publishes detailed service manuals on all of their bikes. You can actually work on your own bike, or at least know what you're asking for when you take it in for repairs. The only conclusion I can come up with is that Volvo must think that owners like to spend all of their money putting their cars in the dealership and putting more money in the till to help Volvo not go under financially. I've got news for Volvo. If they treat their customers like this, they will go under, because people will switch to a brand that treats their customers like they have a brain in their head.

I contacted the Customer Care (hah!) site for help in finding the differences in tread depth between the front and rear tires, before I have to worry about my angle gear going out again, and costing me another \$3100. They said they would send me the Volvo supplement to the Owners Manual (which I already have) that basically says to rotate your tires regularly. Then they ignored my other emails. And I was polite. No bad words!

So far, I'm not impressed with Volvo N.A. Sorry for the rant. On the Harley forums we get wound up with our rants. It helps so we don't throw wrenches or beat on our bikes when they don't work. I have to say that the people on this Forum are great, and no one should own a Volvo XC without participating in this Forum. I've learned a lot from you guys. Thanks!

**tranmkp**

12-04-2006, 10:31 AM

[http://www.artshot.net/ag\\_1.pdf](http://www.artshot.net/ag_1.pdf)

[http://www.artshot.net/ag\\_2.pdf](http://www.artshot.net/ag_2.pdf)

**tranmkp**

12-04-2006, 01:48 PM

Angle gear oil replacement

<http://home.ripway.com/2005-4/294125/Volvo/V70XCBevelGear.pdf>

**mrscullini**

12-04-2006, 01:58 PM

Angle gear oil replacement

<http://home.ripway.com/2005-4/294125/Volvo/V70XCBevelGear.pdf>

nice procedure.

is it required to use "volvo" oil? can multi-weight gear oil be used?

**Greybeard**

12-04-2006, 03:44 PM

Hey tranmkp, thanks for the diagrams of the angle gear and driveshaft. I have a MityVac to bleed the brakes on my Harley, so I'm set to do the fluid change on the angle gear.

Wednesday I go to our Volvo dealer to see what they say about the leak from the new angle gear. I think after that, I'm doing the conversion to FWD. I don't want to worry about the gear going out again. Too much \$\$\$.

Thanks again. You made my millenium!

**tranmkp**

12-04-2006, 04:24 PM

The AG holds less than a quart. Thats not very much. I can only imagine the temps in the summer driving on a long trip.

Looks like it is some sort of transmission fluid. I would think you could run a synthetic Redline or Royal Purple...

volvo specs here.

[http://www.alldata.com/tsb/Volvo/1129186800000\\_1130918400000\\_TNN40-04/401.html](http://www.alldata.com/tsb/Volvo/1129186800000_1130918400000_TNN40-04/401.html)

**tranmkp**

12-04-2006, 04:38 PM

nice procedure.

is it required to use "volvo" oil? can multi-weight gear oil be used?

Looks like you can run another gear oil. GL-5 specs (Gear Lube).

I just talked to the guys at Royal Purple and you can run their synthetic gear lube. Will exceed Volvo specs. Should run cooler too. Need to be sure the seals are in good shape.

**tranmkp**

12-05-2006, 11:27 AM

I have finally come to the conclusion that the AWD systems in these cars are not for continuous application, they are more for spot low speed application. Talking to another service manager today, the BG will likely fail due to heat in continuous high speed driving. Independent of what the tire size is. For example, you wanted to drive to baja in soft sand as fast as you could safely go. Chances are the BG would fail because it would be working outside its design.

That pretty much settles that then. The only way out of this BV failure is to find a way to increase BG lube cooling and capacity. After talking to a machine shop and a fabricator, the cost are going to come in about what a new BG will cost...(pull gear, drill & tap. sensor. stainless steel line, lube pump, fab mount and lube sump, wiring & VDO temp gauge.

**tranmkp**

12-05-2006, 03:30 PM

After talking to a machine shop and a fabricator, the cost are going to come in about what a new BG will cost...(pull gear, drill & tap. sensor. stainless steel line, lube pump, fab mount and lube sump, wiring & VDO temp gauge. [/QUOTE]

update: System will need to run uphill, cooler mounted in front at highest point, downstream on firewall is reservoir and pump then down to BG - check valve needs to be installed downstream of reservoir to ensure BG is not over filled.

Stock vent at top of BG needs to be removed and replaced with a nipple and a tube ran to a higher point with a vented loop and KN filter, should reduce all internal BG case pressure. - similar to setup on Baja1000 rigs.

## bevel gear removal and installation

Welcome, [cchantzis](#).

You last visited: Today at 12:43 AM

[Private Messages](#): Unread 0, Total 0.

[User CP](#) [FAQ](#) [Members List](#) [Calendar](#) [New Posts](#) [Search](#) [Quick Links](#) [Log Out](#)



[Thread Tools](#)

[Search this Thread](#)

[Rate Thread](#)

[Display Modes](#)

#2



08-11-2010, 08:17 AM

[97850awd](#)

Junior Member

Join Date: Apr 2009

Location: montreal quebec canada

Posts: 1



hi

i had to remove mine when i did my clutch, the bolts go all around and the ones by the motor were tight. it is heavy so watch out when you pull it off. i changed the seals and oil in it.



#1

08-10-2010, 01:37 PM

[tolian2](#)

Junior Member

Join Date: Feb 2009

Posts: 5



#### **bevel gear removal and installation**

so since i have a good used unit, i'm going to try to replace the old one.

Right now after i removed a driveshaft i could see the part in the picture below (the part to which the front of the driveshaft connects; has a flange on it)



moving in and out of the whole assembly (but could not be pulled out clean) and moves sideways as well.

I did print a copy of docs from volvo manual, but is there anything else i'd need to know, like a certain trick that some of you had to administer during this job.

thanks a lot and this site is great (i'm used to turbobricks and volvospeed, but it seems that I 'll frequent this one now too).

### **AWD Wagon-Bevel Gear Oil or Angle Gear**

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



[Thread](#)

[Display](#)

#1

 08-21-2007, 07:33 AM[rep](#) 

Junior Member

Join Date: Aug 2007

Location: Northeast

Posts: 2

**AWD Wagon-Bevel Gear Oil or Angle Gear**

I'm new to this forum and I greatly appreciate some help.

I'm a first time owner of a 1998 V70 AWD Wagon and I have been going through it and doing all sorts of maintenance on it. One of the items I'm looking for help on is the AWD system. I've heard it called a bevel gear or an angle gear.

Which terminology is correct?

How often truly should this be serviced?

How to tell if it has ever been serviced before?

All I've been able to find out from the Dealerships is a part number of 1161648. This does not tell me much. I've seen it called Gear Oil or Manual Transmission Fluid. Which is it?

After calling 5 different Volvo Dealerships only one was able to give me the following additional info. In there notes it was called a 75W90 Gear Oil.

In stead of buying this directly from Volvo is there an aftermarket mfg of this fluid?

I look forward to the responses. Thank you.



#2

 08-21-2007, 10:14 AM[mrscullini](#) 

Senior Member

Join Date: Jul 2006

Location: california

Posts: 160



the bevel gear and angle gear are synonymous. the first gen xc uses 75-90 gear oil in this gear box as well as the rear diff. i use mobil 1 syn fluids. the bevel/angle gear is kind of a front diff, but instead of being driven, it drives the drive shaft to the rear diff.

the awd system in the first gen xc is a viscous coupling system. it is important to keep your tires rotated so that

they wear evenly. uneven wear causes the tires to rotate at different speeds, which puts extreme stress on the viscous coupling system.



#3

08-21-2007, 12:51 PM

[BillAileo](#) 

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



Because of the temperatures involved in operation of the bevel/angle gear the specified gear oil is a full synthetic. Any replacement fluid should be a full synthetic. Volvo gear oil, and Mobil 1 gear oil, and other full synthetics of the correct rating are appropriate gear oils. There is a posting on the resources portion of this website that describes replacing the oil in the bevel gear.

The bevel gear is not really a differential (which has one input and two outputs); but rather the bevel gear has one input and one output and consists of a set of beveled gears that mesh at a ninety degree angle in a way intended to provided quiet transmission of power to the rear.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#4

08-21-2007, 01:42 PM

[8pack](#) 

Member

Join Date: Aug 2007  
Location: NJ  
Posts: 44



**Look at post above...**

I just changed the Oil in my Angle Gear or Bevel Gear, or Transfer case...all are the same. Look under the car and see if there any leaks or oil collecting on the case. also do a search on here for angle gear and bevel gear. Someone has already done a good job of posting pics and a description. If it is leaking, you will likely see the leak at the seal in the area where the axle comes in.

If there is evidence of leaks, I strongly recommend you change out your fluid and top off. If the gear oil gets low.....😡 and \$2500 later....

There is a single bolt to undo. You need to draw the fluid out with a suction device (MightyVac or similar) and then pump fresh fluid back in.

You can buy the fluid at your Volvo dealer for about \$20 for a litre. **Just ask for gear oil for the angle gear and say the "75/90 stuff")...**they'll know what you want. Volvo calls it Transmission Oil but it is GEAR oil! I think it is just a linguistic difference like lorry and bus. you can use any GL-5 gear oil as I understand it including synthetic like royal purple. I stuck with the volvo stuff.

There are gradations on the bottle. Pump 700ml-750ml back in accounting for what gets caught in the tube (thick stuff).

Hope this helps...make sure you do a search and don't use my reply as your definitive answer



#5

08-22-2007, 07:51 AM

[tranmkp](#) 

Member

Join Date: May 2006

Posts: 72



**Dont Overfill it!!**

Too much fluid will create pressure and will blow the seals.



#6

08-23-2007, 05:34 AM

[rep](#) 

Junior Member

Join Date: Aug 2007

Location: Northeast

Posts: 2



**AWD Wagon-Bevel GearOil or Angle gear**

First off Thank you for the replies...

mrscullini - from your posting you mention a rear diff. Upon my initial review the rear axle does not seem to be a solid axle type. So I'm confused a bit here. I'm unaware of a rear axle fluid for this vehicle. I see no mention of it in any of the Volvo owners books as well. Which Mobil 1 product did you use?

BillAileo - I'll check the resources portion of the site for info on replacing the bevel gear fluids. Thanks.

8pack - how long of a process was it to change over the fluids? I'm thinking of doing this on an upcoming free weekend.

tranmkp - understood as far as the fill goes to much is never a good thing here.

Any other info would be greatly appreciated. Many thanks.



#7

08-24-2007, 10:20 PM



**RedXC**  
Senior Member

Join Date: Nov 2004  
Location: CA  
Posts: 763



I had mine topped off on my 02, did not know it was a bit low until I did the 30k service. topping off was a bit hard since I didnt have any pumps. Just got a long hose and sure enough I got some in.

[2002 V70 XC] **Venetian Red Metallic**/Blk Leather\*33k+ miles  
-Hands-Free Phone Set, all packages except Nav.  
Turbocharger replaced April/2005 under warranty.

[1991 245] **Metallic Blue/Blue Leather**\*175k+ miles my daily beater.  
[1994 854 GLT] \*141K+ miles

Member of Volvo High Mileage Club and the miles keeps ROLLING!! 🇺🇸 🤖 😊



#8

08-27-2007, 06:32 AM

**8pack**  
Member

Join Date: Aug 2007  
Location: NJ  
Posts: 44



#### **Time to Change fluid**

It takes between a 1/2 hour and an hour....the only real time is laying on your back and pumping the mighty vac to get the fluid to drain and then fill. it is thick stuff and it just takes a while to get it pumped in and out...it really is as simple as undoing the bolt...draining, refilling and replacing the bolt....just remember to get a fresh crush washer from volvo....ask for one at parts, they know what it is...

Good luck and let us know how it goes....🤖👍



#9

10-16-2007, 08:05 PM

**volvoman9**  
Junior Member

Join Date: Aug 2007  
Location: Middle of Wyoming  
Posts: 7



#### **Changing bevel drive oil.**

I have had a Volvo tech install a drain in my '98 XC by drilling into the case from a lower bolt hole. I believe this is a factory sanctioned procedure and can be done without removal of the unit. Costs about 50 bucks.

**Tranny Flush/Bevel Gear Oil/Sell?** Top of Form

- Long

User Name  
Password

Remember Me?

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



[Thread  
Tools](#)

[Display  
Modes](#)

#1

08-21-2007, 08:13 AM

[8pack](#)   
Member

Join Date: Aug 2007  
Location: NJ  
Posts: 44

**Tranny Flush/Bevel Gear Oil/Sell? - Long**

1st post hear although I have been reading for quite some time. Performed some of the maintenance items recommended as follows and have some questions overall:

Vehicle 2000 V70 XC, 125k miles, Mobil 1 oil changes every 5k, small stuff fixed which I found the solution for on here:

Rear tailgate lock failed (severed wire, patched and good to go)

Main window switch failed - Replaced

Thermostat Failed - Replaced hoses and Thermostat

Broken Headlight (hit a deer) - Junkyard part, replaced

**Big Stuff**

**Transmission Flush** - Purchased case of Mobil 3309 from AVlube for \$6/qt with shipping compared to \$19 at delaership. Dealership claimed only the Volvo fluid was acceptable. I did not follow the flush procedure as outlined on the site but used the drain and fill procedure, drained the pan, refilled, drove 5 miles running through the gears, repeat 4 times. I had the transmission thunking problem at highway speeds and around town. Seems to have remediated it. Will flush once every 6 months from now forward with 3 quartsto keep the fluid "fresh.

**Bevel Gear** - Bevel/Angle gear is weeping at the seal where the axle comes in. Seems to be a slow leak. Drained gear box with MityVac as described on here. Only 550ml of fluid came out. Looks like I have lost about 200ml, hopefully not enough to have done any damage...opinions?. Thick nasty brown stuff! **Refilled with 750ml of Volvo 75/90 gear oil (they call it transmission oil).** No noise presently coming from the gear box. I plan to check the level every 30 days to see how much fluid i am losing and top off verifying to see if it gets worse. I don't see why i can't just keep topping it off. As an fyi, the procedure I found on here says to top off until it runs out the fill hole. If you do that it will be over filled if the car is on ramps. Use the graduations on the bottle and put in 750ml.

I am unclear from the posts as to what success people have had getting Volvo or a tranny shop to fix the seals. Seems like 90% of the time volvo says it is a non serviceable part, but some have had success getting their seals changed. If anyone has part numbers for the seals/procedure or tips on how to get volvo or a transmission shop to replace the seals I would appreciate it.

**Intermittent CEL** - Occasionally the CEL comes on and throws a code for a bad cat. The dealer was cool and said to change the O2 sensors 1st and see if it goes away. I did that, and went a way for while. Re-pops every few thousand miles, I reset the light and typically good to go.

**Basic tune up** - Changing plugs and flushing brake fluid this weekend. Volvo wants \$725 for the 120k service, but from what I can see that is all that they do beyond the normal oil change stuff etc.

**Wrap-up**.....Car has 125k miles. 2 known potential major issues, Catalytic converter and Bevel Gear are likely to be failing at some point in the future. In addition, the turbo is an expensive item which I am not sure what the life span is. Otherwise, car runs great and burns no oil. If all those items crap out, we're talking \$6k+ in repairs 😬.

Should it stay or go!?!?

Thanks in advance for everyone's comments/opinions....



#2

08-21-2007, 12:49 PM

[mrscullini](#)   
Senior Member

Join Date: Jul 2006  
Location: california  
Posts: 160



i think you should stay. sounds like you can fix a lot of issue yourself. i have found the volvo to be pretty easy to repair/maintain.

definitely keep an eye on the bevel gear fluid. i cannot comment on the seal replacement.

as for the dtc, what code are you throwing? i would recommend replacing the maf sensor also. i had a similar issue, i replaced the rear o2 sensor and the maf sensor, knock on wood, i have not thrown any new codes. i was throwing generic codes 1171 and 1174.

i cannot really comment on the turbo. it is a low pressure turbo. keep the oil changed often. i use synthetic and change every 3500 miles or so.



#3

10-16-2007, 07:59 PM

[volvoman9](#)   
Junior Member

Join Date: Aug 2007  
Location: Middle of Wyoming  
Posts: 7

 **Bevel gear**

I slid into a curb last year which broke the right front wheel and necessitated driving on the donut for about two weeks. I began to read on various sites about the failure of the bevel drive gear and was convinced that mine was going. I took it to the nearest Volvo tech in my area (500 mile round trip) and he changed a bearing in the front axle and the drive shaft to the rear. The support bearing was failing and causing vibration and noise that seemed to come from the area of the bevel gear. He also replaced a seal in the bevel drive housing. I too had a leak and was low on fluid. The early generation XC's were thought to be able to survive without any change of fluid in this housing for the life of the car. This was later found not to be the case and Volvo began to install a drain in the housing by drilling out a lower case bolt. They recommend changing the fluid every 30 k. I had my tech do this and he claimed the gear was fine but he did find a dry bearing which he was able to re-furbish. The short of this story (if you're still reading) is that yes this can be done and it is a good idea. As you may know a replacement bevel drive unit re-built is around 2500. My car has 125 K on it and has been the most expensive of six Volvo's that I have owned to maintain. However I think this is a function of buying a first generation model. Later versions seem to suffer less from drive train issues. The seals and installation of the drain cost about \$300-350.



#4

 11-28-2007, 10:36 AM

[tbrown4x4](#)   
Junior Member

Join Date: Nov 2007  
Location: Seattle WA  
Posts: 1

 **Amsoil ATF???**

Sorry if this isn't in the right area, but transmission fluid seems to be a hot topic. I was going to buy Amsoil Synthetic ATF for our 2002 with 90K on it. The dealer is going to get me all the info about it so I can compare the specs before I dump it in. Has anyone used this in their trans and how did it go? Great info on the site, I'm glad to have found you. Todd



#5

 11-28-2007, 03:28 PM

[JRL](#)   
Senior Member

Join Date: Apr 2003  
Location: Devon PA  
Posts: 4,066

  
Quote:

Originally Posted by **tbrown4x4** 

*Sorry if this isn't in the right area, but transmission fluid seems to be a hot topic. I was going to buy Amsoil Synthetic ATF for our 2002 with 90K on it. The dealer is going to get me all the info about it so I can compare the specs before I dump it in. **Has anyone used this in their trans and how did it go?** Great info on the*

*site, I'm glad to have found you. Todd*

Some have, the jury is still out.  
You KNOW you're safe with 3309

02-12-2007, 07:29 PM

**clemstock**   
Junior Member

Join Date: Dec 2006  
Location: Chicago, IL  
Posts: 17

#### **Angle Gear Revisited - w/ Pics**

Okay, I've searched and read several threads about the infamous angle gear. I just wanted all of your opinions about this. I couldn't get my pictures small enough to post here so you are going to have to go to my blog that I created to have a look. It's clear to me that the angle gear seal is shot. I was wondering if that is a repair that a "do it your selfer" could handle. Would I have to pull out the right drive shaft in order to pull out the angle gear housing to access the seal/gasket? HubbardWoods here in Chicago (indy volvo specialist) wants \$325 to do the job so I'd like to save some money. I can't seem to find a good "how to do it" anywhere?

My next question is seen in the second picture. There oil leaking from that component. Is that the turbo? Whatever it is, it is directly above (about 1 foot) the angle gear housing, which can be seen in the lower right hand corner of the picture. Any thoughts would be appreciated. Click on the link below to see the pics:

<http://chicagovolvo.blogspot.com>

#### **Volvo XC70 Pics**





Here are the pics. Enjoy. Let me know what you think.

1st picture: Angle gear

2nd picture: Above the angle gear looking up.

Posted by tomwrx at [7:19 PM](#) [0 comments](#)



#2

02-12-2007, 08:06 PM

[jesse850GLT](#)

Junior Member

Join Date: Dec 2005

Posts: 25



second picture is of the turbo

2002 Ocean Race

1995 850 wagon

1994 850 wagon



#3

02-12-2007, 10:38 PM



[MoeB](#)

Senior Member

Join Date: Oct 2006

Location: Nashville, TN

Posts: 710



The oil on the turbo is probably an oil line leak. Apparently a common problem. Mine is doing the same thing. Not sure how to get to it and fix it. It's hard to see the oil line at the angle your pic is shot from, but here's another view (line has green thing around it):



I've seen exploded diagrams of the angle gear somewhere on this site, but I haven't found any detailed instructions for seal replacement either. I'm gonna need to do the same down the road. Maybe BillAileo or Willy or somebody will whip some of their VADIS mojo on us for these fixes. 😊

---

2001 Volvo V70XC  
Venitian Red/Beige  
Cold Weather/Touring/Premium packages  
08/01 Build Date



#4

02-13-2007, 01:39 PM



**volvoshad**   
Senior Member

Join Date: Jun 2006  
Location: Pittsburgh, Pa, USA  
Posts: 260

Leaks from the oil return line on the turbo have been common since the 850. That was a pretty easy

fix, but on the AWD cars, it is a long reach.😬 Mine has a drip similar to MoeB's. Since it is a minor leak, I have just left it alone.😬

I am pretty sure Art had his bevel gear seals/vent replaced, but I can't find the post. Maybe he can give you an idea of the job necessary.

2004 XC70 43K Silver over Graphite, Premium and Cold Weather packages.

2001 V70 XC, 93K, 08/01 build in Torslanda, Sweden, stock except for K&N. Gone but not forgotten.

1995 850 Turbo - great ride with 225K, *not mine any more*😞

2004 XC90 - it's gone

1993 850 GLT - not really missed

1986 GMC Suburban 2500, 454 V8 - for pulling *really* heavy things.🇺🇸

**VCOA**



#5

02-13-2007, 03:25 PM

[clemstock](#)

Junior Member

Join Date: Dec 2006  
Location: Chicago, IL  
Posts: 17



So I made some calls to the dealer about the angle gear/bevel gear and I found out something interesting. The chicagoland dealers are telling me that the angle gear is a "non-serviceable part" and that if I wanted to fix it I would need to replace the entire casing for only \$2500. What a bargain? Would they throw in a tranny too? Hubbardwoods said that they had a fix for it because they quoted me \$325 to fix it. Not sure what the fix entailed though. I asked about the turbo return line leak at some dealers and was getting a quote around \$250. Some indy places were quoting \$100.

Since it is non-serviceable, I was thinking that maybe I would just keep an eye on the fluid level and top it off at every oil change to avoid problems in the future. Mobil1 75-90? What do you guys think about that?



#6

02-13-2007, 03:50 PM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



Sorry, if your angle gear is indeed "shot" then I'm afraid that what you are being told by the dealer is accurate. To the best of my knowledge, VADIS does not describe any work inside the bevel gear or detail any of its internal components. These components simply do not appear to be available other than as part of a replacement unit. All that is dealt with in VADIS in regard to servicing is the replacement

of the bleed value. VADIS does include in its parts listing the various seals and O-rings where the bevel gear mates with other components but that's about it.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#7

02-13-2007, 07:20 PM



[volvoshad](#)  
Senior Member

Join Date: Jun 2006  
Location: Pittsburgh, Pa, USA  
Posts: 260



I think Clemstock's bevel gear seal is shot, not the gear itself. Like our infamous trannies, the bevel gear is non-serviceable, and must be replaced if broken. As I recall, the bleed valve, which is a vent, gets plugged leading to seal leaks. Same principle as the plugged flame trap in the NA 850 leading to rear main seal leaks: if pressure can't be equalized on both sides of a seal by way of a vent, fluid will be forced through the seal.

Please check VADIS - I am pretty sure that the bleed valve and seal can be serviced, but removal of the gear housing is required. The \$325 charge must be for this procedure. To check the gear oil level, pull the fill plug - the oil should be at that level. You may fill with Volvo gear oil, or synthetic 75W 90 gear oil, such as Mobil 1. Instructions for changing the oil are in the resources section of the [volvoxc.com](#).

---

2004 XC70 43K Silver over Graphite, Premium and Cold Weather packages.

2001 V70 XC, 93K, 08/01 build in Torslanda, Sweden, stock except for K&N. Gone but not forgotten.

1995 850 Turbo - great ride with 225K, *not mine any more* 😞

2004 XC90 - it's gone

1993 850 GLT - not really missed

1986 GMC Suburban 2500, 454 V8 - for pulling *really* heavy things. 🚚

**VCOA**



#8

02-14-2007, 04:15 AM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA

Posts: 1,225



Volvoshad,

As I stated in my earlier post "All that is dealt with in VADIS in regard to servicing is the replacement of the bleed value." I had misread Clemstock's initial post as saying the gear was "shot" but what he really said was a seal was shot. You are correct that the instructions for doing the vent replacement require removal of the bevel gear, and that requires a fair amount of work that could justify the \$325 tab. And yes, new seals could be installed in the course of doing that work.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#9

02-14-2007, 05:41 AM

[swedeng](#)

Member

Join Date: Feb 2007  
Location: Ann Arbor, MI  
Posts: 30



Call this guy:

Wolverine Transmission  
1904 Packard St  
Ann Arbor, MI 48104  
(734) 663-3314

Ask for Lou

He located and replaced all the bearings and seals and the car (2000 XC) is back on the road, without a whine. He may offer to rebuild yours.



#10

03-20-2007, 08:13 AM

[tranmkp](#)

Member

Join Date: May 2006  
Posts: 72



**Bevel gear is serviceable**

Doing my modification of the bevel gear - my mech told me it was a no brainer for anyone who has worked on transmissions.

The poster above is correct - vent gets clogged. BG is splashed lubed. Lots of pressure. Pressure will blow seals. I put in a vented loop.

I dont want to get in a s--t fight with anyone but I have my doubts about the tire size issue. Short of some idiot putting a huge tire on the car. I ran a size larger on one tire on the back of my car. I took temp readings of the BG with stock and with the larger tire. There was no difference. This was on a 90 mile trip.

Keep the BV filled, vented and cooled and all will be well.

### Angle Gear Revisited - w/ Pics

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 2 of 3

[< 1](#) [Thread](#)  
[Tools](#)

[Display Modes](#)

# [11](#)

07-08-2007, 10:48 AM

[BoBoKwok](#)

Member

Join Date: Mar 2007  
Location: Hong Kong  
Posts: 66



How many of you have the angle gear blown?

I had my first 01V70XC early this year and blown the angle gear. Now I have my second V70XC.

I notice a minor leak from the transfer case.

I like the XC but I am fear for the angle gear problem happen again. Can we replace or clean the vent of angle gear by ourselves w/o taking it out?

what major(cost) failure an XC70 has?

Quote:

Originally Posted by **tranmkp**

*Doing my modification of the bevel gear - my mech told me it was a no brainer for anyone who has worked on transmissions.*

*The poster above is correct - vent gets clogged. BG is splashed lubed. Lots of pressure. Pressure will blow seals. I put in a vented loop.*

*I dont want to get in a s--t fight with anyone but I have my doubts about the tire*

size issue. Short of some idiot putting a huge tire on the car. I ran a size larger on one tire on the back of my car. I took temp readings of the BG with stock and with the larger tire. There was no difference. This was on a 90 mile trip.

Keep the BV filled, vented and cooled and all will be well.

#12

HYPERLINK "<http://www.v70xc.com/forums/newreply.php?s=e34c14b2fd988c6ehead5662d2396c1f&do=newreply&p=74926>" 07-10-2007, 09:56 AM



**MoeB**  
Senior Member

Join Date: Oct 2006  
Location: Nashville, TN  
Posts: 710



I recently had the bevel gear seals replaced under warranty at a Volvo dealer and thought I'd post the info. According to my invoice, the job required two parts, a sealing ring (30735126-2, \$20.85) and an O-ring (977023, \$5.53). Oddly, no charge for fluid replacement is listed, but I would assume a quart/liter of that is required, too. Labor was \$297.00 (not sure what the rate is). I don't know if the unit was removed or not, but I'll check next time I change the oil and see what it looks like.

Quote:

Originally Posted by **tranmkp**

*I dont want to get in a s--t fight with anyone but I have my doubts about the tire size issue.*

I believe tire size would affect the VC, not the bevel gear.

2001 Volvo V70XC  
Venitian Red/Beige  
Cold Weather/Touring/Premium packages  
08/01 Build Date



#13

07-11-2007, 07:05 PM

**BoBoKwok**  
Member

Join Date: Mar 2007  
Location: Hong Kong  
Posts: 66



According to the posts on this forum, clogging vent is the origin of angle gear problem. Replacing the seal may correct minor leak from transfer case. Keeping the vent working is the key to keep clear of angle gear problem. I had a look at the transfer case early this year. I found a small piece of brass tube (~1/4"long) but I had no time to check whether it is the vent or not. Can

anybody confirm it?  
Is the vent simply a small opening or a one way valve?

Quote:

Originally Posted by **MoeB** 

*I recently had the bevel gear seals replaced under warranty at a Volvo dealer and thought I'd post the info. According to my invoice, the job required two parts, a sealing ring (30735126-2, \$20.85) and an O-ring (977023, \$5.53). Oddly, no charge for fluid replacement is listed, but I would assume a quart/liter of that is required, too. Labor was \$297.00 (not sure what the rate is). I don't know if the unit was removed or not, but I'll check next time I change the oil and see what it looks like.*

*I believe tire size would affect the VC, not the bevel gear.*

#14

HYPERLINK "[http://www.v70xc.com/forums/newreply.php?](http://www.v70xc.com/forums/newreply.php?s=e34c14b2fd988c6ebad5662d2396c1f&do=newreply&p=75002)

[s=e34c14b2fd988c6ebad5662d2396c1f&do=newreply&p=75002](http://www.v70xc.com/forums/newreply.php?s=e34c14b2fd988c6ebad5662d2396c1f&do=newreply&p=75002)"  07-12-2007, 03:04 AM

[BillAileo](#) 

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



There is a small brass tube that VADIS calls the bleed valve. VADIS also indicates it has a filter inserted in the end of the tube after it is tapped into the bevel gear case.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#15

 07-13-2007, 03:37 AM

[BoBoKwok](#) 

Member

Join Date: Mar 2007  
Location: Hong Kong  
Posts: 66



Thanks for the confirmation.

I don't have VADIS.

I didn't find any filter at a glance.

I hope the vent is easily accessible so that it can be cleaned by compress air, WD40 or whatever.

Quote:

Originally Posted by **BillAileo** 

*There is a small brass tube that VADIS calls the bleed valve. VADIS also indicates it has a filter inserted in the end of the tube after it is tapped into the bevel gear case.*

Bill

#16

HYPERLINK "<http://www.v70xc.com/forums/newreply.php?s=e34c14b2fd988c6ehead5662d2396c1f&do=newreply&p=75031>" 07-13-2007, 03:46 AM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



I've never had to do anything with the bleed valve so I don't really know how accessible it is. One bad omen, however, is that VADIS calls for the removal of the bevel gear in order to replace the bleed valve.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#17

07-13-2007, 02:29 PM

[Sasquatch](#)

Senior Member

Join Date: Oct 2004  
Location: New England  
Posts: 644



Wow. What an awesome car. Parts which can only be purchased in "modules".  
Whoopie!

---

Peace

[A human right. Click on your choice.](#)

[Something to think about.](#)



#18

07-13-2007, 05:59 PM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



Sasquatch,  
I'm not sure whether your "modules" comment is in response to my posting. If it is,

I did not intend to say anything about purchasing parts, I was just saying the VADIS indicates removal of the bevel gear is one of the steps involved in replacing a bevel gear vent.

Bill

---

Bill  
03 XC70 OSD  
05 AWD S80 OSD



#19

07-17-2007, 05:19 AM

[shawn\\_75](#)   
Member

Join Date: Jan 2006  
Location: KY  
Posts: 37



I have one of these sitting in my garage. The vent is a small brass tube. It is not accessible while mounted. I'll check it to see if there is any type of valving in it, but I do not think so. I'll post some pics soon.

I had to replace my bevel gear recently and bought one from Voluparts. Luckily they had a new one and the price sure was right, too bad I can't turn the old one in for a core refund (I already checked). I may be able to pull the seals out and cross reference the part numbers. There's not a whole lot to this unit but it is a major job to replace it.

Shawn



#20

07-21-2007, 06:46 PM

[Lee-Bob](#)   
Junior Member

Join Date: Jul 2007  
Location: Southeast Ohio  
Posts: 8



**Can we do this?**

Dang. I just got started in all this, and just read the OP. That pic looks like it was taken in MY garage, of the BG housing in MY '01!  I got a good look at it last night as I was flushing the tranny.

So, as this noob understands the above discussion.... Keeping the vent clear is an important part of keeping an expensive part from failing, and to check or clean it, you have to remove it, which is a major PITA.

Do I have it so far?

How many days would it take the average S\*\*thouse mechanic to do this job? A weekend? Special tools? Double-secret computer resets afterward?

---

---

Lee  
Southeastern Ohio

## Angle Gear Revisited - w/ Pics

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 3 of 3

[< 1](#) [Thread Tools](#)

[Display Modes](#) ▼

#21

09-06-2007, 07:21 AM

[Itoolio](#)

VolvoXC.com Supporter

Join Date: Feb 2004

Location: Lisle, IL

Posts: 109



So, just got a call from my dealership after bringing my 01XC in for some maintenance and to get my Nokian WR's mounted.

I had a leak in an area where they previously fixed my Turbo Return Line, so I mentioned that it appeared that it might be leaking again.

Got a call 30 minutes ago stating that Angle Gear is shot. The materials run around \$2400.

Should be covered under my extended warranty, but now need to wait for further inspection.

Would I have noticed any symptoms of it going? I can't say that I noticed it driving any differently, but my wife is the primary driver.

I'll share more details as they arise.

'01 Volvo V70 XC Ash Gold  
Beige/Light Sand Leather  
Premium / Touring / Booster



#22

09-06-2007, 06:37 PM

[clemstock](#)

Junior Member

Join Date: Dec 2006

Location: Chicago, IL

Posts: 17



**The Original Pics Guy**

Hey Everyone,

I'm the one that started this thread so I thought I'd follow-up and let you know what I did. My first thought was to make sure that the BG had enough fluid until I could get a more permanent fix. Well, I bought the correct wrench, got under the car, and pulled/tugged/battled for 30 minutes and could not get that bolt to move one millimeter. So, I just said screw it and **took it to an Indy-Mech** (hubbardwoods) here in Chicagoland. They looked at it and told me that my gasket was actually fine and that they would just do the nipple/vent repair as given in a Volvo bulletin. The job cost me around \$300 with parts and labor. I think the estimate of \$2400 would be for the entire BG case which would be a last resort after checking the nipple/vent and gasket. Another option would be to say bye-bye to AWD and just disconnect it. So, that's my story. Several months later I haven't noticed any leaks or problems from the BG housing. I wasn't experiencing any symptoms but I knew that it would be an arm + leg + 1/2 kidney to fix if it went out.

Next project...this weekend: B4 servo cover....OMG I love these transmissions.....yipee! 114K and still doing all I can to not have to replace trans at some future date.



#23

09-07-2007, 07:44 PM

[ltoolio](#)

VolvoXC.com Supporter

Join Date: Feb 2004

Location: Lisle, IL

Posts: 109



Got the call from the dealer that the car was done today. They mounted my tires, fixed a couple of the other small things I needed fixed.

However, they said that the Angle/Bevel gear is fine and that I just have some seepage, which they say is not covered under warranty.

The advice I got was just to make sure that I keep it topped off. So - under the car I go tomorrow. I don't definitely know that they filled so, so I think I'll do a full flush.

'01 Volvo V70 XC Ash Gold  
Beige/Light Sand Leather  
Premium / Touring / Booster

**Bevel gear/Haldex fluid??**

Top of Form

User Name

Password

Remember Me?



[Display Modes](#)

#**1**

04-23-2006, 05:53 PM

[wilnis](#)

Junior Member

Join Date: Sep 2005

Location: Iowa

Posts: 9



**Bevel gear/Haldex fluid??**

I've searched but can't come up with what fluids are used in the bevel gear and Haldex and the "recommended" change intervals. I have a MY 2005. Any help as to what these are, or where I can search for them would be appreciated. I did find info about the pre 2000 XC 70, and some conflicting recommendations about the fluid being 75-90 gear lube or JWS 3309 transmission fluid. Again, any references would be appreciated. Thanks-Bill



2005 XC70, Barents Blue, Stock for now.



#**2**

04-24-2006, 07:03 AM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003

Location: Dimock, PA

Posts: 1,225



In trying to look up the answer to your question on an older VADIS listing I ended up locating two different part numbers for the fluid for the bevel gear. I don't know if these are different size containers of the same fluid or what the explanation is. Anyway the two numbers are 1161513-5 and 1161648. These are off of a listing for 2003-2004 XC70s (my data doesn't cover newer cars).

I'd guess its JWS 3309 but I wouldn't recommend acting on my guess, just buy the correct stuff from your Volvo dealer or confirm what it is.

To the best of my knowledge, Volvo does not recommend replacement of the fluid. However, they don't recommend changing transmission fluid either & I think a number of folks have concluded that such changes are good preventive maintenance measures if they are very carefully undertaken.

Good luck,

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#3

04-24-2006, 09:30 AM

[dlr97](#)

Senior Member

Join Date: May 2004  
Location: Redding, CA, USA  
Posts: 334



I have read that the bevel gear housing is separate from the auto trans, so I would guess that it uses some type of gear oil, and not the trans fluid. The Haldex is in another separate housing in front of the rear differential.



#4

04-24-2006, 03:47 PM

[wilnis](#)

Junior Member

Join Date: Sep 2005  
Location: Iowa  
Posts: 9

**Haldex/bevel gear fluids??**

Thanks for the replies. JWS 3309 part # in Volvo language is 1161540 so I'm guessing it is some other fluid. I'm of the school of thought that "lifetime" means "warranty life" and prefer to do preventive maintenance to transmissions and I'm looking at the other fluid containing compartments to maintain to hopefully extend the life of my Volvo. I'll talk to my friendly dealer to see if I can get the info from them. Thank you again. Bill



2005 XC70, Barents Blue, Stock for now.



#5

04-26-2006, 05:36 AM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



My curiosity was too much for me so I purchased a download of Volvo's one page October 13, 2005 "Tech-Net Notes" Number 40-04 that addresses "Transmission and AWD Lubricants." There is an entry for Angle Gears that reads as follows:

Angle Gears (All) \_\_\_\_\_ API GL5, BOT \_\_\_\_\_  
1161648 (1 liter)

So you are correct, the bevel (angle) gear does NOT use JWS 3309.

I have no idea what the letters "BOT" after the API GL5 entry means. If you find out please let us know.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#6

04-27-2006, 07:49 AM

[jmoser](#)

Senior Member

Join Date: Dec 2002

Posts: 249



Sounds to me like any hypoid differential lube meeting API GL5 would work.

Just my guess but there is no clutch pack, etc. in the bevel gear case. Its just another form of a passive differential.



#7

04-28-2006, 07:57 PM



[Art](#)

Super Moderator & VolvoXC.com Supporter

Join Date: Oct 2001

Location: Red Deer, AB., Canada

Posts: 3,829



Below is a list of Volvo transmission and AWD approved lubricants that applies for all models. Hope that helps. 😊

| Application                                                                                                                                                                                                                                                                                                                                                                       | Note                                                                                                                                                                                                                                                                                                                                                                                                            | Part Number                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 5 and 6 Speed Automatic Transmissions</li> <li>-AW55</li> <li>-TF80-SC</li> </ul> <p>This fluid is also recommended to address two complaints on the AW 50-42:</p> <ul style="list-style-type: none"> <li>• Harsh Lock-Up engagement/disengagement (SB 43-0029)</li> <li>• Squeaking noise during low speed turns (TNN 43-11)</li> </ul> | <p><b>JWS 3309</b></p> <p>The only oil approved for the 5 and 6 speed automatic transmissions is JWS 3309. None of the other fluids available on the market have been evaluated by Volvo to meet the requirements of these specific transmissions regarding:</p> <ul style="list-style-type: none"> <li>• Shift quality</li> <li>• Slipping lock-up functionality</li> <li>• Transmission durability</li> </ul> | <p>1161540 (1 liter)</p> <p>1161640 (4 liter)</p> |
| <ul style="list-style-type: none"> <li>• 4 Speed Automatic Transmissions</li> <li>-GM4T65EV</li> <li>-AW50-42</li> <li>-AW30-40/43</li> <li>-AW70/71/72</li> <li>-ZF22</li> </ul>                                                                                                                                                                                                 | Dexron IIIG or IIH                                                                                                                                                                                                                                                                                                                                                                                              | 1161621 (4 liter)                                 |
| <ul style="list-style-type: none"> <li>• 5 and 6 Speed Manual Transmissions</li> <li>-M56</li> <li>-M66</li> <li>• Chain Housing</li> <li>-XC90 T6</li> </ul>                                                                                                                                                                                                                     | API GL4, Synthetic                                                                                                                                                                                                                                                                                                                                                                                              | 1161745 (1liter)                                  |
| • Angle Gears (All)                                                                                                                                                                                                                                                                                                                                                               | API GL5, BOT                                                                                                                                                                                                                                                                                                                                                                                                    | 1161648 (1 liter)                                 |
| • AOC (Active On-Demand Coupling)                                                                                                                                                                                                                                                                                                                                                 | Specific oil for the AWD clutch                                                                                                                                                                                                                                                                                                                                                                                 | 1161641 (300 ml)                                  |
| • Rear Differential<br>(200/700/900 with optional limited slip)                                                                                                                                                                                                                                                                                                                   | API GL5, with limited slip additive                                                                                                                                                                                                                                                                                                                                                                             | 1161619 (1 liter)                                 |
| • Rear Differential (All Others)                                                                                                                                                                                                                                                                                                                                                  | API GL5, low friction                                                                                                                                                                                                                                                                                                                                                                                           | 1161620 (1 liter)                                 |
| • Cleaning Manual Transmission Input Shafts                                                                                                                                                                                                                                                                                                                                       | Sprayable mineral based grease                                                                                                                                                                                                                                                                                                                                                                                  | 1161657 (200 ml)                                  |
| • Lubricating Manual Transmission Input Shafts                                                                                                                                                                                                                                                                                                                                    | Sprayable PFPE grease                                                                                                                                                                                                                                                                                                                                                                                           | 30759651 (150 ml)                                 |
| • Lubricating AWD spline interface<br>-splines between transmission and angle gear                                                                                                                                                                                                                                                                                                | Lithium grease with PAO base                                                                                                                                                                                                                                                                                                                                                                                    | 1161748 (10 ml)                                   |

2006 [VOR XC70 - #35/100](#)  
[iMIV iPod Adapter](#)

RICA i-Softloader   
 Elevate Sway Bars, IPD HD End Links

[volvoXC.com Stickers HERE!](#) 😊



#8  
 04-29-2006, 03:32 AM

[BillAileo](#)   
 VolvoXC.com Supporter

Join Date: Feb 2003  
 Location: Dimock, PA  
 Posts: 1,225

  
 Art,

Thanks for posting that chart! Just out of curiosity, have you figured out what the "BOT" in the angle gears specification is? So far, the best I can come up with is that it's

possibly a manufacturer (Burmah Oil Technology GmbH). Since Volvo went to the trouble of listing two other distinct versions of API GL5 for other components, I'd want to know for sure what that "BOT" means (or buy the gear oil from Volvo) before replacing my angle (bevel) gear lubricant.

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#9

04-29-2006, 04:05 AM



jbl  
Member

Join Date: Feb 2005

Location: Sweden

Posts: 70



BOT is something Volvo use as there internal code for low foaming fluid.

I dont know if the fluid for bevel gear is extra low foaming if we compare it with other fluids.

Anyway its an 75W90 viscosity. I had it replaced after 10000km. The fluid wasent lightbrown as new fluid. It had started to be black.

The haldex unit needs the fluid to be exchanged if we look at the coulour of the fluid who has been in service. In my case i had it replaced after 50000km and the fluid was black.

Since there is no drain plug you had to practice the same technique as Nemlerise has described how to replace the fluid in bevel gear.

You will only get out approximately 4dl of total 7-8dl. I have done this three times until the fluid become clear in the Haldex unit.

As i see it there is no fluid for lifetime use in these Volvos. It is cheap insurance to replace all fluids in our cars. Especially if you intend to keep it for a long time.

If i was looking for an second hand AWD Volvo i would look for one who had this kind of maintenance. Otherwise i would not buy it. The parts are way to expensive to replace.



#10

04-29-2006, 04:25 AM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



JBL,

Thanks! I certainly agree with your conclusions about making regular lubricant changes. I replaced the automatic transmission's JWS 3309 at 30,000 miles and will be doing it again shortly at 60,000. At that time I also plan to replace the bevel gear lubricant as well. When you change your bevel gear lubricant do you use the siphon approach originally taken by Nemlerise, or have you drilled the hole in the body of the unit to create a drain as he added to the discussion later?

Bill

Bill

03 XC70 OSD

05 AWD S80 OSD

**'03 xc70 rear angle gear**

Top of Form

User Name

Remember Me?

Password

[Register](#)

[FAQ](#)

[Members List](#)

[Calendar](#)

[Today's Posts](#)

[Search](#)



Page 1 of 2 **1** [2](#) [Thread Tools](#)

[Display Modes](#)

#1

05-03-2004, 06:35 PM



[barrysharp](#)

VolvoXC.com Supporter

Join Date: Dec 2002  
Location: Woodinville, WA  
Posts: 3,085



**Imported post**

Had car in for it's 15,000 service today. Car's actual mileage was 16,110.

Technician had me come back to see car on the lift and pointed out the oil leak coming from the rear angle gear box (splitter box is sometimes used as its name as

well) that sits just aft of the engine and just above the engine skid/protection plate. The leak isn't bad but having the alloy engine protection plate made it obvious it had been leaking over time as there were dried dollops of oil plainly visible on the light gray color of the plate's upper surface. This is one benefit of the alloy engine skid/protection plate as any oil drips are CLEARLY visible compared to the black plastic plate that comes as stock.

The rear angle gear box will be special ordered and replaced under warranty and should be shipped out within two days.

FYI

My brake pads were  
LF @ 8 mm  
RF @ 8 mm  
LR @ 9 mm  
RR @ 9 mm

This shows very even wear at front and rear. 😊

Tire condition was  
LR 7/32" ;  
RF 7/32" ;  
LR 7/32" ;  
RR 7/32" ;

This shows an even wear on all four tires (amazing).

Cost for the 15K servicing was  
Labor @ \$132  
Parts @ \$49.94 (Filter insert \$7.50, Gasket \$1.48, Cabin Fresh AirFilter \$40.96)  
Oil @ \$11.50  
Misc @ \$9.24  
Tax @ \$18.03  
TOTAL @ \$220.71

All in all I was pleased with the servicing and thankful the inspection found the leaking rear angle gear box.

Regards -- Barry Sharp

'07 S60R, **Titanium/Nordkap**,GT,18",Sports Body Kit,BT,iPod,iPhone,IPD Stage II  
Tune 365HP 🏆,16Kmi,"**R-MATEY**"  
'03 XC70 OSD, Plat Grn,Prem,Tour,Nav,803,iPod,70Kmi,"**MANX-1**"  
Son's '01 S60 2.3L T5,Maya Gold,96Kmi  
SOLD '86 745 GLE 6-Cyl-Turbo Diesel,Graphite,255Kmi



05-03-2004, 08:16 PM



[Raynald](#)

VolvoXC.com Supporter

Join Date: Jan 2003

Location: Sherbrooke, Québec

Posts: 855

**Imported post**

Hey Barry! Nice to hear that your XC is nicely rolling along! 😊 Did the tech person made any comments about the rear angle gear/box leak? &nbsp;🤔

Raynald

Former owner of a [2001 V70XC Nautic Blue](#)

**Sept 2003 - April 2007**

« Sold » with 167,427 km on the clock, to my stepson...

Still proudly showing [volvoXC.com](#) Sticker for posterity !!!



#3

05-04-2004, 06:56 AM



[barrysharp](#)

VolvoXC.com Supporter

Join Date: Dec 2002

Location: Woodinville, WA

Posts: 3,085

**Imported post**

**Quote** Raynald @ May 03 2004,20:16

Hey Barry! Nice to hear that your XC is nicely rolling along! 😊 Did the tech person made any comments about the rear angle gear/box leak? \* 🤔

The technician was very accommodating and allowed me to inspect the leaking box. He started off saying the box should be absolutely clean on the outside -- same as for a similar box in the rear of the car which was bone dry. The leak is really quite small but apparently my service dept has only seen this on one other XC70 and they replace its box also.

They know I'm kinda anal when it come to my cars so they wanted to show me the actual leaking condition to avoid my endless questions when they told me the rear angle gear box was leaking -- that was kind of them. 😊

Regards -- Barry Sharp

'07 S60R, **Titanium/Nordkap**,GT,18",Sports Body Kit,BT,iPod,iPhone,IPD Stage II Tune 365HP 🏆,16Kmi,"**R-MATEY**"

'03 XC70 OSD, Plat Grn,Prem,Tour,Nav,803,iPod,70Kmi,"**MANX-1**"

Son's '01 S60 2.3L T5,Maya Gold,96Kmi

SOLD '86 745 GLE 6-Cyl-Turbo Diesel,Graphite,255Kmi



#4

05-04-2004, 07:05 AM



[Raynald](#)

VolvoXC.com Supporter

Join Date: Jan 2003  
Location: Sherbrooke, Québec  
Posts: 855



**Imported post**

So, nothing to worry about as it seems to be a very rare problem...

Thanks Barry! &nbsp;  😊

---

Raynald

Former owner of a [2001 V70XC Nautic Blue](#)

**Sept 2003 - April 2007**

« Sold » with 167,427 km on the clock, to my stepson...

Still proudly showing [volvoXC.com](#) Sticker for posterity !!!



#5

05-04-2004, 01:19 PM

[BillAileo](#)

VolvoXC.com Supporter

Join Date: Feb 2003  
Location: Dimock, PA  
Posts: 1,225



**Imported post**

Barry,

Been there done that.... \*At the 15,000 mile mark I was changing the oil on my '03 XC70 and noticed the bottom of the angle gear was damp with gear oil. \*I had read Volvo Tech Notes No. 46-08 that covers all 5 cylinder AWD Volvo cars from 1997 through 2004 and begins with the description "If oil weepage is found at the Angle Gear Vent, a new vent valve should be installed." \*I called the dealer and scheduled an appointment for the new vent. \*However, when the dealer did the work they determined that the seepage was not due to the vent valve, but rather failed internal O rings. \*They installed a new Angle Gear. \*

I have a couple hundred miles on the new Angle Gear and it seems to be staying completely dry.

Still love the car. \*

Bill

---

Bill

03 XC70 OSD

05 AWD S80 OSD



#6

05-04-2004, 06:46 PM



[barrysharp](#)   
VolvoXC.com Supporter

Join Date: Dec 2002  
Location: Woodinville, WA  
Posts: 3,085



**Imported post**

`</span><table border="0" align="center" width="95%" cellpadding="3" cellspacing="1"><tr><td>Quote (BillAileo @ May 04 2004,13:19)</td></tr><tr><td id="QUOTE">Barry, Been there done that.... *At the 15,000 mile mark I was changing the oil on my '03 XC70 and noticed the bottom of the angle gear was damp with gear oil. *I had read Volvo Tech Notes No. 46-08 that covers all 5 cylinder AWD Volvo cars from 1997 through 2004 and begins with the description &quot;If oil weepage is found at the Angle Gear Vent, a new vent valve should be installed.&quot; *I called the dealer and scheduled an appointment for the new vent. *However, when the dealer did the work they determined that the seepage was not due to the vent valve, but rather failed internal O rings. *They installed a new Angle Gear. *`

I have a couple hundred miles on the new Angle Gear and it seems tro be staying completely dry.

Still love the car. \*

Bill[/QUOTE]<span id='postcolor'>

Thanks -- interesting that your mileage was very close to mine and quite likely very close sine I overan my 15K by 1100 miles.

Regards -- Barry Sharp

'07 S60R, **Titanium/Nordkap**,GT,18",Sports Body Kit,BT,iPod,iPhone,IPD Stage II Tune 365HP ,16Kmi,"**R-MATEY**"  
'03 XC70 OSD, Plat Grn,Prem,Tour,Nav,803,iPod,70Kmi,"**MANX-1**"  
Son's '01 S60 2.3L T5,Maya Gold,96Kmi  
SOLD '86 745 GLE 6-Cyl-Turbo Diesel,Graphite,255Kmi



#7

 05-06-2004, 06:07 PM

[toma nova](#)   
Senior Member

Join Date: Sep 2002  
Location: IAD => NRT => IAH  
Posts: 161



**Imported post**

I've been off the forum for a few months and decided to check in ...

I was changing the oil this past weekend and noticed fluid on the stock skidplate: I have the same leak you have described Barry. I cleaned it off and looked real close with a work light and it does appear to be coming from the vent area of the gearbox.

I'll schedule service for it and I'll be prepared for either the O rings or a complete





#10

05-08-2004, 01:28 PM

[barrysharp](#)

VolvoXC.com Supporter

Join Date: Dec 2002  
 Location: Woodinville, WA  
 Posts: 3,085

**Imported post**

</span><table border="0" align="center" width="95%" cellpadding="3" cellspacing="1"><tr><td>**Quote** (Willy @ May 08 2004,12:08)</td></tr><tr><td id="QUOTE">Barry,  
 \$11.50 for oil, is that engine oil? I think they will charge me that amount for 1 liter over here (Belgium). My car was delivered with full synthetic oil (Shell Helix Ultra, Ferrari spec oil \* 😊 \* 😊 )  
 Willy[/QUOTE]<span id='postcolor'>

Yes the oil was \$11.50. We do get off lightly in USA I must admit. 😊

Regards -- Barry Sharp

'07 S60R, **Titanium/Nordkap**,GT,18",Sports Body Kit,BT,iPod,iPhone,IPD Stage II Tune 365HP 🇺🇸,16Kmi,"**R-MATEY**"  
 '03 XC70 OSD, Plat Grn,Prem,Tour,Nav,803,iPod,70Kmi,"**MANX-1**"  
 Son's '01 S60 2.3L T5,Maya Gold,96Kmi  
 SOLD '86 745 GLE 6-Cyl-Turbo Diesel,Graphite,255Kmi

11-02-2004, 07:25 PM

robaincltnc  
 Guest

Posts: n/a

**mine too but OUT OF WARRANTY**

Hi all..well my angle gear bit the dust..dropping ugly black grease on my driveway..and uglier than that is the \$2000 price tag to get this fixed! Plus, the turbo return line is leaking and they will replace that for \$240..great news, huh? So that is \$2240..in you guys opinion should I pay the money and not think twice? Or run scared..is this a pretty solid vehicle and I just happened to get unlucky on this one..incidentally, my heater blower motor is out..so that will be another \$300. I am a little concerned as I thought Volvo's are pretty rock solid.

Its a 2000 Volvo XC 70 SE.

Thanks for any replies!  
 rob



#12

12-23-2005, 09:51 PM

[ChicagoXC](#)

Member

Join Date: Jun 2004  
 Location: Chicago  
 Posts: 58

 **Yeah, Mine Too.**

My wife took the car in for service and the tech told her I need to replace the Angle Gear Seals - Part # 1377058 (might be 1377658 depending on his writing). Service tells me it's \$12.03 for the seal(s) and \$380 to have them put it in 😞.

Apparently, it takes 3 hours (for them) and will be extremely difficult for me to do myself. And, of course, the tech panicked my wife by telling her it could fail at any moment 🤪.

Anybody replaced these?

What do I need to do to access this?

Is there a special tool required to press in the seal?



#13

 12-25-2005, 09:12 AM

  
Member

Join Date: Feb 2005  
Location: Sweden  
Posts: 70



Well Chicago,

Its a big job. Dont know exactly the procedure. Ive had mine angle gear replaced due to leaking.

Right drive shaft needs to be removed i guess, dont know if prop shaft needs to be removed. Maybe they just can divide the angle gear in place but the thing is that i dont know.

### **Re: Drive shaft problems**

.by [holler1](#) » 10 Oct 2009, 20:35

I had a problem with the front to rear driveshaft CV joint a few years ago on my 98 V70 AWD, and I always thought it was because of the heat from the exhaust too. I'm attaching a couple of pictures. Neither of them shows the heat shields very well, but it does show the grease thrown from the joint after the boot failed. I got a kit to replace the CV joint, and it has worked fine for more than 50K miles.



volvo v70 awd driveshaft small.jpg (30.76 KiB) Viewed 333 times

1998 Volvo V70 AWD 150000-R muffler, HD endlinks, boost gauge

2008 Ford Fusion AWD 27500

1991 Toyota Camry 160000#1

Previous: 1982 Volvo DL (240) 160000

1998 Tacoma, Fords (5), Dodge, Montero,  
GTO, Sunbeam Alpine, VW Dasher

