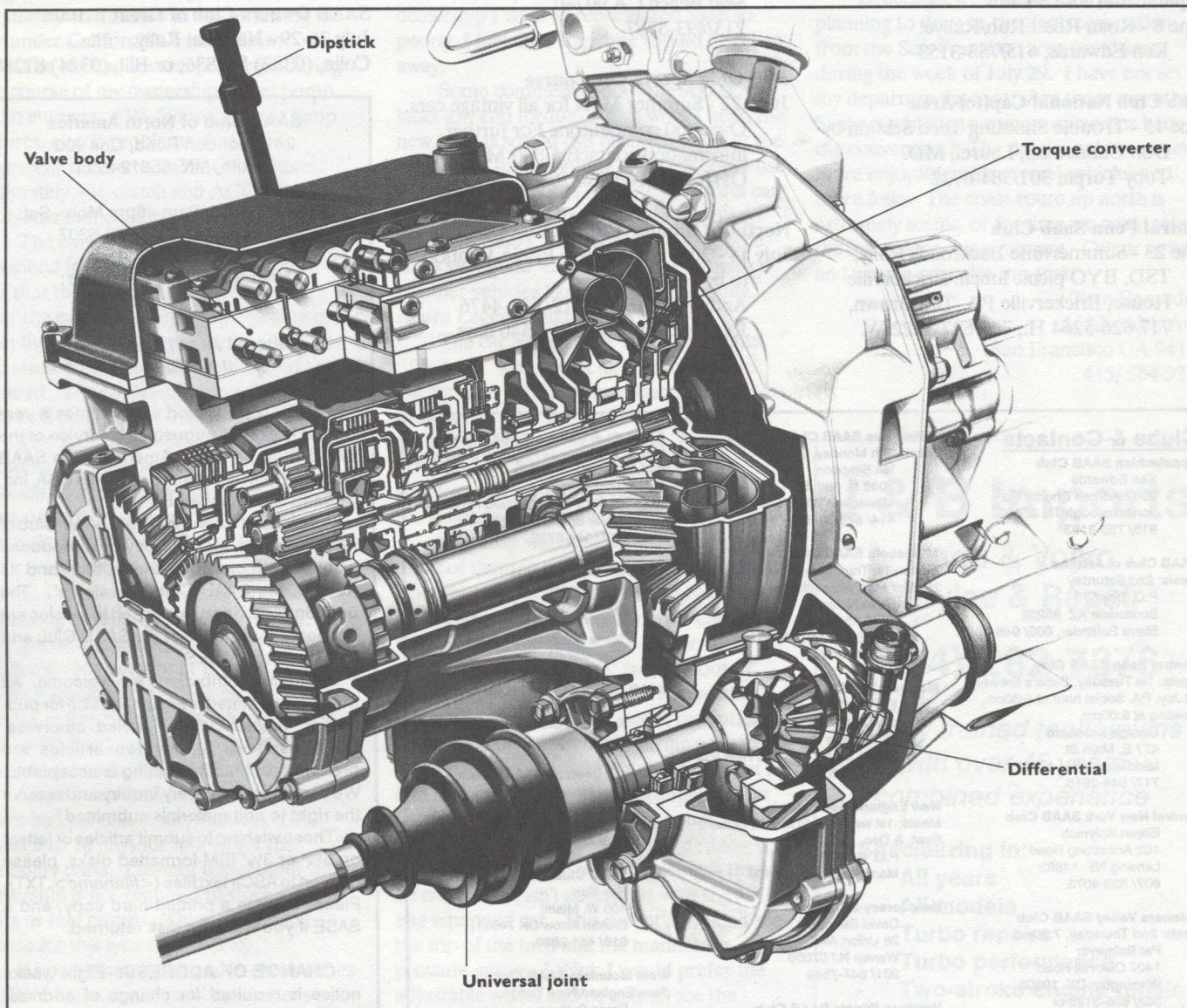




NINES

THE SAAB CLUB NEWSLETTER

\$2.95
May
1991
no. 203



Transmissions:

9000 4-speed automatic

2-stroke & V4 boxes

Neuter the freewheeling on a V4 4-speed

Road test summary: 1956 - present

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*History of the Two-Stroke
SAAB Invades the US*

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Regional Club News

Calendar of Events

National SAAB Owner's Convention

August 2 - 4, Seattle, Washington.

For more, see page 4.

Skip Schott, (206) 486-1351.

Appalachian SAAB Club

June 8 - Roan Road Run/Rallye.

Ken Edwards, 615/753-3153

Saab Club National Capitol Area

June 15 - Trouble Shooting Tech Session by

Don Danneman, Laurel, MD.

Toby Turpin 301/384-6732

Central Penn Saab Club

June 23 - Summertime Backroads Rally,

TSD. BYO picnic lunch. Brickerville

House, Brickerville PA. Tim Brown,

717/626-5264 H., 717/627-7222 W.

New England Sonett Club

June 23 - Annual meeting, in conjunction with Forest City Saab's Family Rallye Day, Beech Ridge Motor Speedway, south of Portland, Maine.

Scott Prentice, 603/679-1222

Southern California SAAB Club

June 29 - Temecula Wine Tasting & Picnic, 10:30am-1:30pm, at Cilurzo Vineyard.

For map, send SASE to:

Paul Florance

126½ Main St

Seal Beach CA 90740

213/493-6707

Mid-Ohio Sports Car Course

June 22 - Summer Meet for all vintage cars.

Over 300 competitors. For further

information contact: 1-800-MID-

OHIO or 614/876-3203

Northern Illinois (Chicago) SAAB Club

July 14 - 20th Anniversary Picnic, location

to be announced.

Andy Federowski, 312/ 631-4476

Jon Petersen, 708/ 675-6540 days

International Club Meets

Saab Owner's Club of Canada

May 31 - Advanced Driving School, Shannonville Motorsport Park, Belleville, Ontario

John S. Casey 519/576-3604

Stockholm SAAB Club

June 14 - 16, Int'l SAAB Clubs Meet and 30th Anniversary.

Ragnar Johansson,

Phone: +46-8/6525280.

SAAB Owners Club of Great Britain

July 26-29 - National Rally.

Colin, (0382) 541836; or Bill, (0324) 812888

SAAB Club of North America

2416 London Road, Unit 900

Duluth, MN 55812-2221

218/ 724-1336, 9am - 6pm Mon - Sat

Fax number: 218/ 728-6307

NINES Editor & Publisher:

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Editorial contributions are welcome. All material submitted is assumed to be for publication unless clearly labeled otherwise. Double-spaced typewritten articles are preferred, but most anything is acceptable. We cannot answer every inquiry and reserve the right to edit materials submitted.

Those wishing to submit articles or letters on 5¼" or 3½" IBM-formatted disks, please convert to ASCII textfiles (<filename>.TXT). Please include a printed hard copy, and a SASE if you want the disk returned.

CHANGE OF ADDRESS: Eight weeks notice is required for change of address. Please send new address and old address, including zip codes, to the SAAB Club at the address above.

RETURNED CHECKS: There will be a fee of \$10.00 charged for checks returned for any reason.

Clubs & Contacts

Appalachian SAAB Club

Ken Edwards
296 Brethren Church Rd
Jonesborough TN 37659
615/ 753-3153

SAAB Club of Arizona

Meets: 2nd Saturday
P.O. Box 573
Scottsdale AZ 85252
Steve Bolander, 602/ 946-1865.

Central Penn SAAB Club

Meets: 1st Tuesday, Bube's Brewery,
Mt Joy, PA. Social hour at 6:30pm,
Meeting at 8:00pm.
George Basehore
477 E. Main St.
Middletown PA 17057
717/ 944-2915.

Central New York SAAB Club

Eileen Kolynich
102 Armstrong Road
Lansing NY 14882
607/ 533-4073.

Delaware Valley SAAB Club

Meets: 2nd Thursday, 7:30pm
Pat Bolmeyer
1407 Oak Hill Road
Wilmington DE 19805
302/ 695-3125 or
302/ 994-6357

Great Lakes SAAB Club

(Western Michigan)
Jim Laman
617 Beechwood
Holland MI 49423
616/ 335-5215.

Milwaukee SAAB Club

Meets: 4th Monday, 7:30pm
Ian Simpson
3046 N. 46th St.
Milwaukee WI 53210
414/ 873-0816

Minnesota SAAB Club

Meets: 1st Thur, 8pm, Professors,
HarMar Mall, Roseville, MN.
Dean Nelson
1420 15 Terrace NW
New Brighton MN 55112
612/ 636-3771.

Montreal SAAB Club

E. Peter McLoughlin
c/o Dormer Laboratories
6600 Trans Canada Hwy
Pointe Claire, Quebec H9R 4S2
514/ 451-5165.

New England Sonett Club

Meets: 1st weekend in March, June,
Sept. & Dec.
P.O. Box 4362
Manchester, NH 03108.

New Jersey SAAB Club

David Starbuck
28 Union Ave.
Warren NJ 07059
201/ 647-7549

Northern Illinois SAAB Club

24 hour Events Hotline:
312/ 763-4752.
Jon Petersen, 708/ 675-6540

Northwest SAAB Owners

Rich Roberts, 206/ 771-7100 days
Skip Schott, 206/ 486-1351.

SAAB Club National Capital Area

Meets: at Bethesda Regional Library,
Bethesda, MD.
Toby Turpin
14901 Peach Orchard Rd.
Silver Spring MD 20904
301/ 384-6732.

SAAB Clubs of Georgia

Meets: 1st Monday.
Chris McPherson
4877 Pine Shadows Dr
Stone Mountain GA 30088
404/ 469-SAAB

SAAB Owners Club of Canada, Inc.

P.O. Box 578
Bradford, Ontario L3Z 2B1
Chris Teixeira, 416/ 737-5827.

Southern California SAAB Club

Paul Florance
126-1/2 Main St.
Seal Beach CA 90740
213/ 493-6707.

Tulsa SAAB Club

Ray Kurr
405 W. Miami
Broken Arrow OK 74011
918/ 451-2899.

West Mountain SAAB Club

(New England/New York)
David Sullivan
314 Union Ave.
Framingham MA 01701-6319
508/ 879-8288 after 6pm.

Western Pennsylvania SAAB Club

Andy Bittenbinder
9433 Katherine Dr.
Allison Park PA 15101
412/ 364-4780.

Letters to NINES

Sour & Sweet

I purchased a 1989 9000 Turbo new from Ramsey McCue Saab in Redlands, Calif. in February of 1990. Soon after the odometer hit 1000 miles, I began to be plagued with a series of problems that ultimately culminated in me returning the car under California's Lemon Law.

The car had several problems during the course of my ownership -- fuel pump, radio antenna, ABS failure, various lamp failures, clutch problems, front end alignment problems and ACC troubles. Ultimately, the clutch and ACC were the problems that couldn't be solved.

The clutch problem, similar to one described in the December issue of NINES, was that the clutch would go to the floor after the car had been sitting anything more than five days. If the car was in gear when you started the engine, the car would lurch forward. The problem resolved with repeated pumping of the clutch.

The ACC was more interesting. After warming up, if the system chose the "vent" position, it would get stuck there. Because I drive up and down a mountain, this was particularly irritating. The system would go to air conditioning (with the vent position) then as I climbed the hill I would need defrosting or heat. I could get hot air, but only out of the vent and not where I really needed it. No amount of manual button pushing would override the problem. The car was in five times for this problem and still wasn't fixed (as also was the clutch) at the time I returned the car for a refund.

Some other problems -- the dealer never had parts in stock; it always took about 5 to 10 days for him to get the necessary parts. I cannot understand why a dealership is not required to stock such parts as fuel pumps. There is no good excuse for this type of "service".

As previously described in other issues of NINES, the dealer, and the dealer's poor excuses for mechanics, can't diagnose. What's more interesting is that the internal diagnostic routine of the ACC pointed out the problem to them, but they refused to change or check the parts that the computer said were malfunctioning. After talking to the mechanic once, it became very obvious

that he could not think, he could only change parts.

In spite of this, I still liked the car, and I am now considering the purchase of a used 9000T, out of warranty. At least this way I would not feel guilty working on the vehicle myself. The service manual appears to be very complete.

In all of my dealings with Saab, I must say that the district managers and the "higher ups" really do attempt to please. It is a shame that they have to deal with such incompetent people at the dealership. The dealership I went to represented Saab so poorly, I feel their franchise should be taken away.

Some comments about the 9000T. It lacks low end torque. From what I hear, the new 2.3 has solved this problem, sadly at the expense of fuel economy. The car could use a bit more leg room (I'm 6', 2"). If Audi can fit me in a 90 Quattro, I should be able to fit in the 9000T. The comfort level of the car is very good, especially when compared to other vehicles like the Nissan Maxima, Acura Legend and the like.

The car is extremely versatile with its fifth door. You can fit all sorts of stuff in the car with the fold down seats and the back hatch. The transmission (5-speed) is the smoothest I've ever owned. I would probably like a bit more stiffness in the stabilizer bars, but this I believe is part of the suspension mod kit.

The alloy wheels are a joke -- I bent three of them in my one year of ownership. The wheels are either too soft or the low profile tires simply do not provide enough protection to the wheel. I was able to purchase used "take-offs" from an out of state dealer at half the cost of a new wheel, but this is a problem that needs resolution. At no time do I remember hitting a rock or other obstacle. I would simply notice that I had a vibration and when I brought the car to my tire man he would tell me that I had a bent wheel.

The air bag is a mixed blessing -- the steering wheel isn't adjustable with the air bag equipped car. This meant I couldn't see the top of the tach and the manifold pressure gauge. I think I would prefer the adjustable wheel and be able to see the instrument panel adequately.

I live in snow country and I often drive in less than ideal conditions. If the ACC had worked properly, I might have felt a bit better, but in general, I don't feel the 9000T is a real winter car. I could not get chains to fit without banging -- not enough wheel

clearance. With chains on, the car was squirrely. My BMW Bavaria with a limited slip differential was vastly superior in snow conditions, even without front wheel drive. Yet I still like the car for fair weather -- it's a fast, comfortable sedan with plenty of room, good handling, and good gas mileage. Too bad the dealer network is so poor.

Guy G. Giacomuzzi DDS
Cedar Glen CA

Convention convoy?

Greetings, west coast Saab fans. I am planning to drive to the Saab convention from the San Francisco area sometime during the week of July 29. I have not set my departure date yet. Are there any other Saabers wishing to convoy up and/or back to the convention? The drive would be much more enjoyable with several vehicles and more folks. The coast route up north is extremely scenic, or for time we could take the interstates - or a mixture. Call or write and we can organize this trek.

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For your convenience, 200 rooms will be held at the Crystal Mountain Resort until July 1, 1991. You must reserve your rooms directly with the resort. Please contact Phyllis at (206) 663-2558 to reserve your room.

CONVENTION REGISTRATION INFORMATION:

NAME(s): _____

ADDRESS: _____

CITY/STATE: _____

ZIP/PHONE: _____

SAAB(s) OWNED: _____

INTERESTED IN INFORMAL CONCOURS (Y/N): _____

REGISTRATION FEES: (Include Friday party, 3 meals on Saturday and Sunday brunch.)

Total Number of Adults:

Whole Event

_____ x \$65 = _____

Saturday Only

_____ x \$50 = _____

Total Number of Children under 12:

(whole event or sat. only)

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TOTAL = _____

Check or money order payable to:

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Cancellations for full refund will be allowed until July 5th.

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Submit your questions with as complete information on the problem as possible, also giving the year and model of SAAB. Problems of general interest will be answered here. No requests for personal replies please. Questions which would require modification of, or would defeat Federally required emissions systems will not be answered. For a proper diagnosis, it is recommended that you contact an authorized SAAB dealer or repair shop.

Send your questions to: SAAB KLINIK, 2416 London Road, Unit 900, Duluth, MN 55812-2221

I presently own a **1986 9000 Turbo**. I have been getting a squeal from the engine compartment when I start the car. It seems to clear up after awhile.

One Saab mechanic changed a pulley, but the squeal hasn't gone away. Another tells me it is the engine mounts. Shouldn't it have something to do with belts and the way they are aligned?

Sidney Weber
Pembroke Pines FL

Most squeals when first starting up are related to the drive belts. The most common problem is an overworked alternator and a slightly loose serpentine belt. Be sure the belt is in good condition in its entire length, with no chunks missing or glazing on the drive surfaces. The belt tension must be checked with a special tension gauge. A few early 9000s had belt squeal problems in the morning that were cured only after the power steering pump was replaced.

On a cold start on a cold day (below 45° F), my '86 9000T turns over fine and runs well, but after a few seconds a squeal begins. The squeal disappears with a thump if the throttle is twitched. The thump can be felt through the clutch pedal, which is fully depressed. This behavior occurs regardless of ACC or electrical load, although it appears to be more pronounced with lights, rear defroster and ACC on. The only other clue is that the power steering feels heavy once in awhile when the car first pulls away. Once underway the car is fine. I suspected the belts and replaced the serpentine belt. I examined all the pulleys while the belts were off and they seemed to spin okay. All parts are genuine Saab, and the serpentine belt and its tensioner are of the new design.

How does one get the fender liner out to get at the alternator, pulleys and other hardware? I had no problem with the screws, but the half dozen nuts along the wheelwell arch proved to be trouble. Once loosened, the bolt spun with the nut.

Tony Gounalis
Endicott NY

Your problem sounds similar to the previous one except that you mention a thump through the clutch pedal. Maybe the

release bearing is dry and close to failure.

The early inner fenders and the arch moulding were held on with hardware that quickly corroded. Just cut the old bolts and replace them with the later stainless bolts.

My **1987 9000 Turbo** has an intermittent but persistent problem. It is on its third battery in two years. The problem is that every once in awhile the brake pedal sticks and the brake lights stay on, then the battery drains if I don't use the car for a couple of days. I've had the electrical brake light switch replaced, but the problem persists.

Ken Charof
New York NY

The brake booster is hanging up. The problem has been noticed on many early 9000s. Be sure the cruise control switches are not hindering full return of the pedal before you blame the booster. We tried loosening the booster on the pedal shaft boot and injecting silicone directly into the booster. I don't recommend this as a permanent fix, but it may be worth a try.

For the past six months or so my **1976 99GL** (98,000 miles) has had problems with idle speed, high gas consumption, etc. It starts fine while the engine is still cold, and the idle stays high as long as I drive the car. When I restart the fully warmed engine it starts slowly and sometimes misses. The idle remains low after restarting and pickup is very bad. The engine compression is fine (160-170 psi in each cylinder), it has new spark plugs, wires and points. It also has a new warmup regulator and fuel accumulator. In resetting the timing (14° BTDC), I noticed that the timing mark oscillates more than three-quarters of an inch. Could this be related to the problem?

Shahzad Saleem
Norman OK

Check the fuel injectors for leaks after shutting down. Ensure that fuel rest pressure is within spec by running the engine until hot with a fuel pressure testing gauge connected, then monitor the rest pressure.

The ignition timing variance is due to a worn distributor shaft bushing and/or a loose breaker plate. New bushings and breaker plates are available from Saab or Bosch.

I have two interior illumination lighting problems on my **1985 900 Turbo 4-door**.

The interior lamps no longer go on when I try to use the console lamp switch, nor does the trunk lamp go on when the trunk lid is opened. Both lamps work when I move the switches to the lower or "manual on" position. The interior lamps do light when the doors are opened and the lamp switch is in the upper position, which is the same position the console lamp switch should work in, but doesn't. I popped the console switch out and the connections are tight and there is no corrosion. Are these two problems somehow related and is it something I can fix myself?

Also the automatic front seat heaters do not warm up during cold weather. What should I look for to correct this problem?

Joe Tomanek
Waterloo NY

I'm going to venture a guess that you have two separate problems. The console switch needs to be replaced. Unplug it and jump the wires together. The lamp should light. The trunk lamp switch, bulb or connections may be at fault. A 12-volt test light is a great and inexpensive fault tracing tool for problems such as these.

If your trusty test lamp shows you have current to the seat, use an ohm meter to check for a complete circuit in the seat. You'll end up pulling the upholstery cover off anyhow to find the break in the grid or in the thermostat itself. The breaks can be carefully soldered and covered with shrink-type insulation. The thermostat is available as a separate part.

At 22k miles, the AC compressor shaft seal on my '89 900 failed. The dealer replaced the compressor, clutch and drier. Now, when the AC cycles on, there is a "clunk" and the engine loads up for a moment. The dealer claims it's normal.

Scott Shiple
Miami FL

It sounds like the system has been overcharged. On a warm day, the low side may be around 15 to 20 psi and the high side, 250 to 280 psi. If the system is charged on a cool day, the pressures can sometimes become too high when the temperature rises.



TOUGH SHIFT?

In order for a transmission to shift properly, the oil must be squeezed from between the synchros and the slipperiness of the oil must be overcome so that the synchros can come to equal speeds. Oils which are too thick or too slippery will cause shifting difficulty. Modern motor oils contain additives to enhance slipperiness and improve fuel economy, which slows synchronization. In order to speed cold shiftability, SAAB recommends low viscosity lubricants such as 10W30 or 10W40 motor oils or 75W gear oils. These lubricants are generally too slippery and the shearing forces of the gear teeth reduce the viscosity of these lubricants to the viscosity of an ATF within a few thousand miles. This reduction in viscosity causes gear whine and accelerates gear wear.

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SERVICE SUBJECTS



FROM SAAB

Cold Weather Starting Problems

Application: 1988-89 900 Models with EZK Ignition
 PSI 03/91-0093, Sec. 3/Pg. 6

1988-89 900 models with EZK ignition system (B202I engine) utilize a power stage integrated with the ignition coil. The ground wire for this power stage has a relatively long travel resulting in the possibility of enough ground circuit resistance to affect cold weather engine starting.

To shorten this ground path, a procedure has been developed to install a new ground wire from the power stage directly to the right-hand inner fender. This procedure also includes replacement of the hard plastic cover over the coil with a rubber boot for improved moisture protection.

In case of a cold starting complaint, the procedure described below should be used before installing an LH system cold start injector kit. Also insure that all grounding points are clean and tight, that the charging system is operating properly, that the oil is the correct viscosity for the anticipated cold temperatures and that the spark plugs are the correct type and heat range (NGK BCP5ES).

Parts Required

Ground Cable Kit	85 48 265
- Screw	79 22 347
- Protective boot	85 66 374

Modification Procedure

1. Disconnect the 4-pin connector from the power stage (see Figure 1) and peel back the connector's protective boot.
2. Push pin No. 2 (wire 648, black) back out of the connector and cut off the terminal. Tape this wire back to the harness.
3. Install the new ground wire from the kit through the sleeve of the boot and into pin 2 of the connector. Refit the

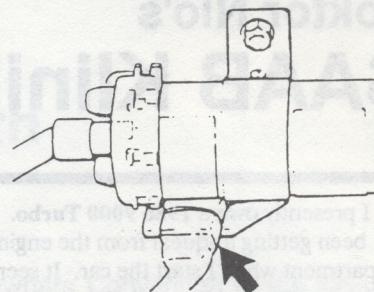


Figure 1. 4-pin connector at the power stage.

- boot over the connector.
4. Connect the 4-pin connector to the power stage.
5. Drill a 3mm hole in the RH inner fender as shown in Figure 2.
6. Clean the surface around the hole to provide a good contact to ground.
7. Route the cable as shown and install the screw supplied with the kit through the ring terminal on the end of the ground wire.
8. Spray the screw and surrounding surfaces with a rust protection solution.
9. Remove the plastic cover from the coil and withdraw the secondary wire leading to the distributor. Clean the areas around the high and low tension terminals.
10. Insert the secondary wire into the rubber boot supplied with the kit and install the boot onto the coil.

NOTE: Only NGK BCP5ES spark plugs should be used on 1988-89 B202 naturally-aspirated engines.

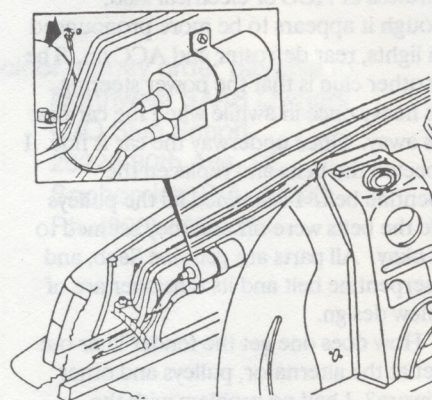


Fig 2. Drill a 3mm hole in the RH inner fender.

Saab Parts and Service Information updates are provided to NINES as a courtesy to Saab owners by Daniel L. David, director service and technical, and Sten O. Helling, President of Saab Cars USA, Inc.

SAAB NEWS

Saab sales soar, special financing continues on 9000s

While many auto manufacturers experienced lower sales for the first four months of 1991, new Saab sales increased by 25 percent over 1990's figures.

Special retail finance and leasing programs for Saab 9000 models were extended through May 31, 1991, due to the success in improving sales of Saab cars.

Sales of new Saabs during April were the second best ever for that month, with 4,004 new cars delivered. That represents an 84 percent increase over April 1990. Year-to-date, 10,606 new Saabs have been registered, which is a 25 percent gain compared to the first four months of last year.

Saab sold 10,611 new cars in the first four months of 1989, and ended that year with sales of 31,549. Saab Cars USA, Inc., is projecting sales during 1991 will be comparable with 1990, or about 27,000 cars.

900 Production returns to Trollhattan

Final assembly of the Saab 900 has returned to the Saab Automobile factory in Trollhättan, Sweden. The first 900 since 1987 left the assembly line in Trollhättan on April 29. 13,000 900 cars are planned for the Trollhättan factory during 1991.

The Saab 9000, which had been built on both assembly lines in Trollhättan, is now being assembled in two-shift operation on one of the assembly lines. The other line is used on day shift for building the 900. Due to improved productivity, no additional manpower is needed to handle the extra work load.

To accommodate assembly of the 900, the assembly line in the Trollhättan plant has been modified at a cost of around SEK 20 million (\$3.4 million US), including incidental costs such as for training.

The 900 has always retained a firm foothold in Trollhättan - sheet-steel parts were pressed at the factory all along, and the bodies were welded and painted there. Painted bodies were then dispatched by rail - originally to Arlööv and later to Malmö - for final assembly.

Production at Saab-Valmet in Finland is based on pressed sheet-steel parts supplied from Trollhättan, but everything else - from building of the bodies to painting and final assembly of the cars - is carried out in-house at Saab-Valmet.

Does the present procedure for assembling the 900 differ substantially from the way the car was assembled in the Trollhättan plant back in 1987?

"The personnel and the way of working are the two main differences," says Anders Molinder, head of the assembly plant. "Back in 1987, production volumes were on the upswing and the manpower was growing, but high personnel turnover and absenteeism made the situation unstable. Moreover, many of our operators were inexperienced and their average age was low."

"The situation today is entirely different," continues Molinder. "Personnel turnover and absenteeism have dropped dramatically, and the employees are highly skilled. We are now in a much stronger position. We are simply much more professional today."

Eventually, production of all Saab 900 cars, except the 900 Convertible and Saab 900 cars intended for the Finnish market, will be transferred to Trollhättan. The factory in Malmö, Sweden, will cease production sometime this summer.

Since production of the Saab 900 began back in 1978, a total of around 843,000 900s have rolled off the various production lines. Out of this total, the Trollhättan factory had built 384,000 before production was transferred to Arlööv, Sweden, in 1987. The Saab-Valmet plant in Uusikaupunki, Finland, has so far produced around 267,000 cars. The plant in Arlööv produced 173,000 cars between 1980 and 1990, and the Malmö factory will have built more than 19,000 Saab 900s by its closure date.

The Saab 900 is a true Saab classic, bearing all the hallmarks that distinguished every Saab over the decades. Due largely to its unique, almost defiant styling, the Saab 900 is widely considered to be the ultimate Saab.

The 900 was unveiled as a 1979 model. A development of its 99 predecessor, the 900 has a longer wheelbase, greater overall length, better handling, improved safety and styling in the true Saab spirit.

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ZF Auto Trans in 9000

Ed. Note -- There have been several calls and comments lately on the ZF automatic transmission in the Saab 9000. A bit of research indicates there is not a problem with the transmissions per se, but with some of the associated components -- noise in the thermostatic valve, and transmission failure due to a faulty ATF cooler in the radiator. Saab has addressed the problems in Service Information to its dealers. They are reprinted here for your enlightenment.

Checking for Transmission Oil Cooler Leakage in the Radiator

S.I. 07/88-1062, Sec. B-4/Pg. 16
(also in S. I. Supplement 7B)

A manufacturing quality problem in some water-cooled oil coolers mounted within the engine radiator of 9000 models equipped with automatic transmissions may result in leakage. This leakage will contaminate the antifreeze with ATF and/or the ATF with antifreeze.

Radiators with a date code of "JC" or higher are not affected. The date code signifies the year (J = 1988), and the month (C = March) of production and is stamped on the right side of the top plate next to the part number. (See Figure 1062-1).

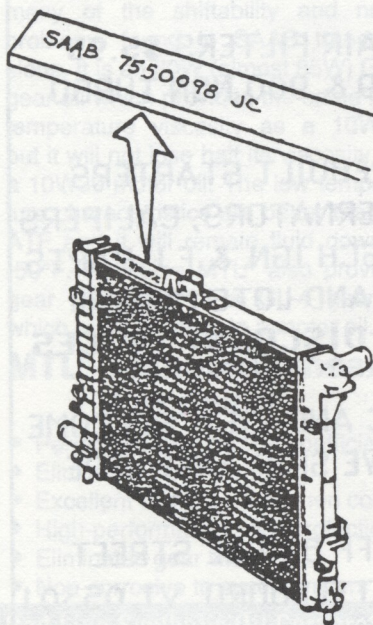


Figure 1062-1: 9000 radiator date code.

Inspection:

Many times the leakage can be detected before the transmission develops symptoms which can be related to contamination. The antifreeze in the coolant reservoir should be inspected for traces of ATF whenever a car is in for an oil change or service.

If the leakage goes undetected for a period of time, the transmission may develop symptoms that can indicate a radiator oil cooler failure. These symptoms include:

1. Erratic or hard shifts.
2. Noise when shifting, particularly on the 2-3 upshift.
3. Clutch slipping tendencies.

When diagnosing transmissions with any of the above symptoms, check for contamination as follows:

1. Inspect the antifreeze in the coolant reservoir for ATF contamination.
2. Drain and inspect the transmission fluid. A pink or milky appearance indicates that contamination has taken place.
3. Remove the valve body cover on the transmission. Inspect for separated droplets of antifreeze or pink, milky emulsion in the recesses of the valve body assembly and main case.

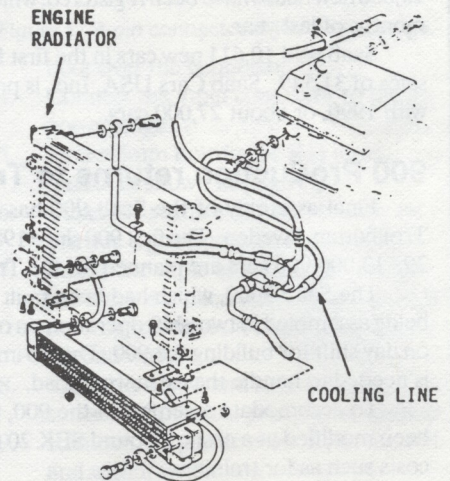
Action Required:

1. If evidence of ATF is found in the coolant and/or coolant is found in the ATF, the engine radiator must be replaced.
2. If evidence of ATF is found in the coolant and the transmission does *not* have any of the symptoms described above:
 - A. Replace the engine radiator.
 - B. Remove the air-cooled oil cooler, thermostat, and oil cooler hoses and clean thoroughly to remove any traces of antifreeze. The SAAB Flushing Kit will not remove liquid contaminants.
 - C. Change transmission fluid using new Dexron II ATF.
 - D. Flush and refill engine coolant using SAAB antifreeze coolant (50/50 mix with water).
3. If evidence of coolant is found in the ATF and the transmission does have any of the above symptoms, follow the procedure found in SI 07/88-1063.

Transmission Damage Due To Coolant Contamination

S.I. 07/88-1063, Sec. B-4/Pg. 17
(also in S. I. Supplement 7B)

Replacing a transmission that is damaged due to antifreeze contamination requires extra care to prevent contamination of the replacement unit.



Cooling circuit flow for 9000 ZF automatic

Action Required:

1. Replace the engine radiator whenever ATF inspection indicates antifreeze contamination.
2. Remove the air-cooled oil cooler, thermostat, and oil cooler hoses and clean thoroughly to remove any traces of anti-freeze. The SAAB Flushing Kit will not remove liquid contaminants.
3. Install replacement transmission and fill with new Dexron II ATF.
4. Clean and flush the transmission cooling system to remove and possible solid contaminants by using the SAAB Flushing Kit and an new filter (see SI 05/88-1057).
5. Flush engine cooling system to remove any traces of ATF. Refill with new SAAB antifreeze coolant (50/50 mix with water).
6. Check transmission line pressure settings using the pressure gauge and the upper test plug to ensure that they are within specification as per Saab Service Manual 4:2. Adjust throttle cable as needed.

Coolant Contamination in the ZF Automatic Transmission

S.I. 02/90-1215, Sec. B-4/Pg. 27

This Service Information provides an illustration detailing the exact locations in the transmission valve body where contamination residues will collect. Examine these locations to determine if antifreeze has contaminated the transmission.

Transmission Contamination Inspection Procedure

1. Drain and inspect the transmission fluid. Antifreeze or a pink, milky substance indicates that contamination has taken place.
2. Remove the valve body cover on the transmission. Inspect for any of the following indications:
 - a. Separated droplets of antifreeze or pink, milky emulsion in the recesses of the valve body assembly, screw heads, or main case (Figure 1215-1.)
 - b. Rust formation and/or sludge accumulation on the old-style metal vent.
 - c. Rust formation and/or sludge accumulation on the underside of the valve body cover.
 - d. Rust formation on the steel separator plates of the valve body assembly.
3. If evidence of coolant is found in the ATF and the transmission, follow the procedures in S.I.'s 07/88-1062 and 07/88-1063.

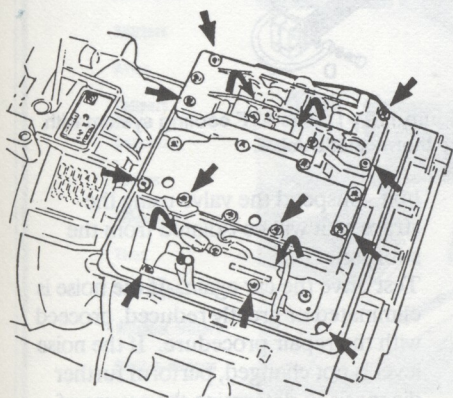


Figure 1215-1: Inspect for droplets of antifreeze or pink, milky emulsion in the recesses of the valve body assembly. Since oil floats on water, the antifreeze may settle at the bottom of the recesses. Probing and stirring may be necessary to provide a complete inspection.

Flushing an Automatic Transmission Cooling Circuit

S.I. 05/88-1057, Sec. B-4/Pg. 14

(also in S. I. Supplement 7B)

When replacing a 9000 automatic transmission, the cooling circuit must be flushed to avoid possible contamination of the new transmission. Flushing Kit P/N 87-91-824 was designed specifically for this purpose and uses the standard Saab long-life engine oil filter. When installed, the flushing kit will reverse the flow of fluid (see figures 1057-1 and -2) through both of the coolers and thermostat. The fluid will then pass through the filter before being returned to the transmission.

CAUTION

If a vehicle is found to have coolant mixed with the transmission fluid, all transmission cooling circuit components must be removed and flushed with solvent or replaced if necessary, before flushing with this special tool.

Flushing procedure:

- Ensure that a new filter is installed on the adapter.
1. Remove both the supply (A) and return (B) hoses from the transmission (Figure 1057-1).
 2. Connect the angled end of one of the spare hoses from the flushing kit to the supply connection (A) on the transmission housing (Figure 1057-3).

Connect the other end of the same spare hose to the car's original return hose (from connection B) using the long banjo bolt, three washers and cap nut supplied.

3. Connect the car's original supply hose (from connection A) to the side of the filter adapter (Figure 1057-4).
4. Connect the angled end of the other spare hose to the return connection (B) on the transmission (Figure 1057-3).

Connect the other end of the same spare hose to the top of the filter adapter (Figure 1057-4).

5. Connect the electrical harness as follows (Figure 1057-5):
 - Yellow wire with female spade to the temperature sensor on the filter housing.
 - Black wire with female spade to the ground lug on the filter adapter.
 - Yellow wire with the male spade (insulated) to the yellow wire disconnected from the engine temperature

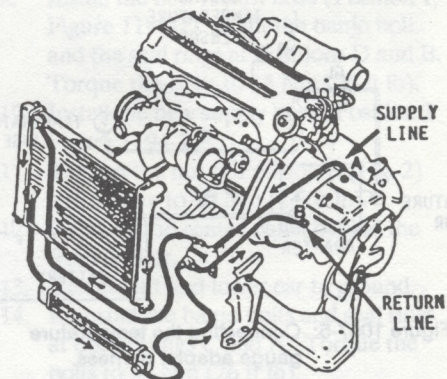


Figure 1057-1: Normal flow of the ZF cooling circuit.

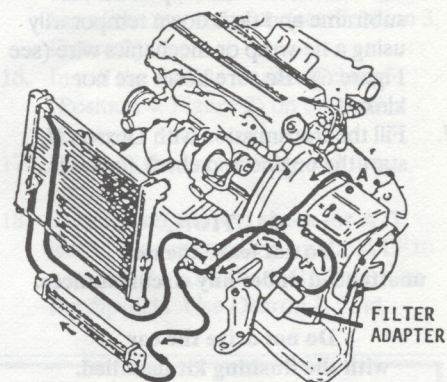


Figure 1057-2: ZF cooling circuit with flushing kit installed.

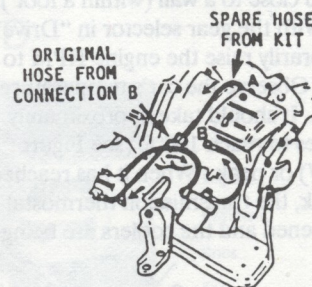


Figure 1057-3: Routing and connecting flushing adapter and hoses.

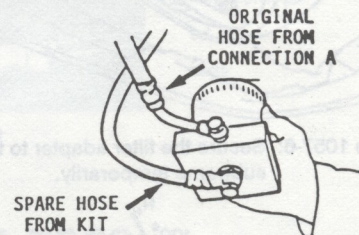


Figure 1057-4: Hose connections at the filter adapter.

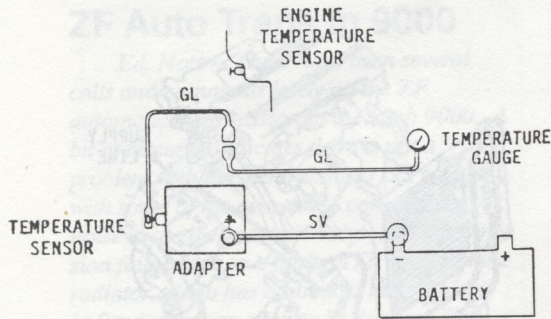


Figure 1057-5: Connecting the temperature gauge adapter harness.

sensor.

- Black wire with the alligator clip to the negative battery terminal.

- Place the filter and adapter on the subframe and tie it down temporarily using a tie-wrap or mechanics wire (see Figure 6). Be sure hoses are not kinked.
- Fill the transmission with Dexron II, start the engine and check for leaks.

CAUTION

Do not leave the car unattended under any circumstances.

Do not drive the car with the flushing kit installed.

- Set the parking brake and block both drive wheels with the front of the car parked close to a wall (within a foot). With the gear selector in "Drive", temporarily raise the engine RPM to 1500. Observe the car's temperature gauge. It should take approximately 15 minutes to reach 100°C (see Figure 1057-7) or peak. When it has reached its peak, the transmission thermostat has opened and the coolers are being

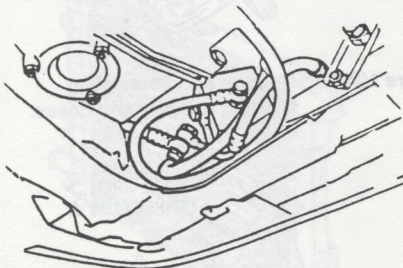


Figure 1057-6: Secure the filter adapter to the subframe temporarily.

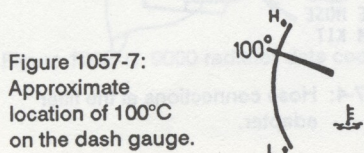


Figure 1057-7: Approximate location of 100°C on the dash gauge.

- flushed. Allow the system to flush for at least five minutes.
- Remove the flushing adapter, hoses, and harness.

NOTE - Adapter should be cleaned and stored with a new filter installed on it.

Reconnect the original oil cooling system hoses to their respective connections on the transmission. Connect the engine temperature sensor. Top up the transmission ATF and complete transmission installation (road test, check for leaks, etc.)

Noise from ATF Cooling System

S.I. 11/89-1194, Sec. B-4/Pg. 25

Some 9000s equipped with automatic transmission may develop a resonant noise in the automatic transmission fluid (ATF) cooling system that can be heard inside the car. The noise arises from pressure pulsations in the cooling circuit that cause the thermostatic valve to vibrate. The noise can be compared to turbine whine, a moan, or a bearing noise. Although the noise does not create any functional or reliability problems in the transmission, some customers may find it to be objectionable.

The amount of noise is influenced by the amount of air that is present in the ATF.

- Excess air can be whipped into the ATF if the transmission is either underfilled or overfilled.
- The age of the ATF can affect its air content since the anti-foaming additives of the ATF can break down over time, especially under severe operating conditions such as city driving or trailer towing. Cars driven under severe conditions should have the ATF changed every 15,000 miles.

The noise primarily affects cars operated in hot climates or during hot weather. The car must be driven long enough to heat the ATF up to the temperature where the thermostatic valve opens. The pitch of the resonance is dependent on the engine speed, so that as the engine's RPMs increase, the pitch also increases. When the transmission shifts to the next higher gear, the pitch will decrease at the shift point and then increase again as the engine speed increases.

To eliminate the noise, service kits for both turbo and naturally-aspirated models

are now available. Each kit contains two newly-designed ATF cooling system hoses that replace the thermostatic valve and the four current hoses.

Parts required:

ATF Hose Kit, Turbo	41 18 881
or	
ATF Hose Kit, normally-aspirated	41 18 899
Seal ring (both kits, as needed)	89 81 961

Diagnosis

- Determine what type of noise is being heard, when it is heard, and the operating conditions under which the vehicle is driven.
- Check the ATF level to ensure that it is correct. Review the service history to determine when the ATF was last changed.
- Verify the complaint by test driving the car until the transmission is warm.
- Unbolt the ATF thermostatic valve from the engine subframe attachment

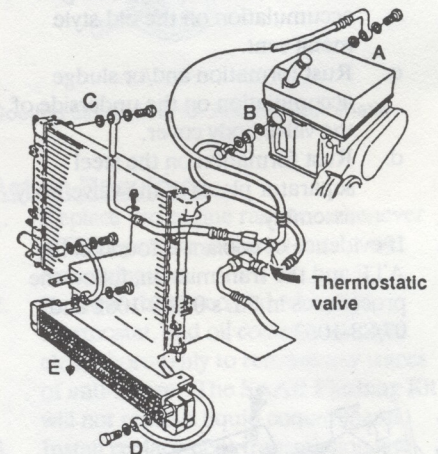


Figure 1194-1: The ATF cooling system with the thermostatic valve.

- bolt. Suspend the valve using the straps so it will be isolated from the subframe.
- Test drive the car again. If the noise is eliminated or greatly reduced, proceed with the repair procedure. If the noise level is not changed, perform further diagnosis to determine the source of the noise.

Repair procedure

- Remove battery and tray.
- Clean the ATF hose fittings at Positions A and B (Figure 1194-1). Remove the banjo bolts and seal rings.

Let the loose hoses hang in front of the transmission.

CAUTION

When loosening the banjo bolts at the water-to-oil and air-to-oil coolers, use a wrench on the cooler fittings to oppose the torque exerted on the banjo bolts. Failure to do so may cause damage to the coolers,

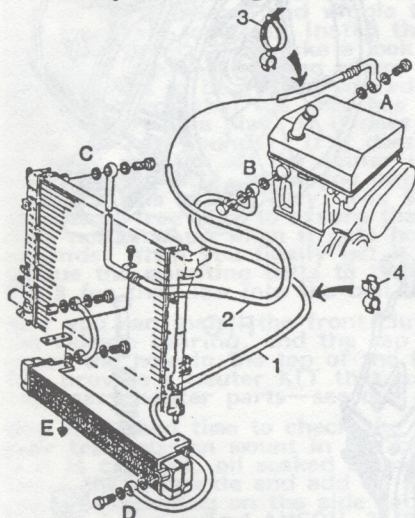


Figure 1194-2: Install the new hoses and refit the banjo bolts and seal rings.

resulting in ATF and/or antifreeze leakage.

3. Clean the upper hose fitting at Position C (Figure 1) for the water-to-oil cooler mounted within the radiator tank. Remove the banjo bolt and seal rings.
4. Raise the car and set the lift.
5. Remove the center panel behind the front spoiler.
6. Clean the hose fitting at Position D (Figure 1194-1). Remove the banjo bolt and seal rings.
7. Loosen the nut used to secure the supply hose to the radiator air-to-oil cooler bracket (Position E, Figure 1).
8. Remove the nut securing the thermostatic valve to the engine subframe. Remove the valve together with the hoses and refit the nut. Torque the nut to 50 Nm (37 ft lb).

CAUTION

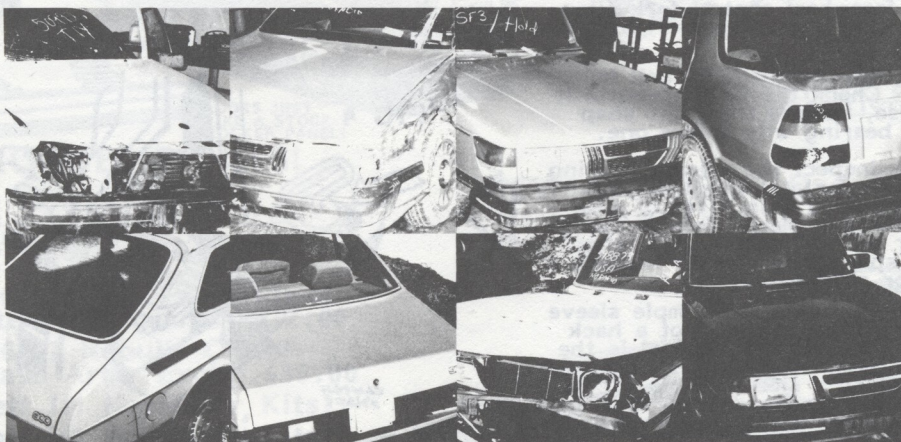
When tightening the banjo bolts at the water-to-oil and air-to-oil coolers, use a wrench on the cooler fittings to oppose the torque exerted on the banjo bolts. Failure to do so may cause damage to the coolers, resulting in ATF and/or antifreeze leakage.

9. Install the new return hose (Position 1, Figure 1194-2). Refit the banjo bolt and the seal rings at Positions D and B. Torque the bolts to 35 Nm (26 ft lb).
10. Install the new supply hose (Position 2 Figure 1194-2).
11. Tighten the nut at Position E (Fig. 2) and torque to 10 Nm (7.5 ft lb).
12. Reinstall the center panel behind the front spoiler.
13. Release lift and lower car to ground.
14. Reinstall the banjo bolts and seal rings at hose fittings C and A. Torque the bolts to 35 Nm (26 ft lb).
15. Using the single stand-off clamp from the kit, suspend the ATF supply hose from the engine coolant hose above to keep the supply hose from resting on top of the transmission (see Position 3, Figure 2).
16. Install the double stand-off clamp (Position 4, Figure 2) on the cooler hoses.
17. Reinstall the battery tray and the battery.
18. Start the engine and check for ATF leaks. If necessary, top up the ATF to a level just above the "MIN" mark on the dipstick. Use Dexron II fluid.



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LET'S NEUTER IT!

I've had several calls lately about neutering the Saab 95/96/97 transaxle. I've also seen some horrible, welded-up examples of how NOT to do it, so here is the way to do it right.

The transaxle must be out of the car, drained, and cleaned thoroughly. Knock out the axle drivers (see Fig 1) and remove the bell housing bolts. Don't forget the single bolt on the top right that faces rearward. Remove the release bearing. Use two screwdrivers and gently separate the bell housing from the transaxle. Be sure to collect the small needle bearing on the end of the clutch shaft that fits inside the freewheel hub of the transaxle mainshaft. Once the bell housing is off you do not have to do anything to the transaxle unless you need to do work on it due to noise, hard shifting, etc.

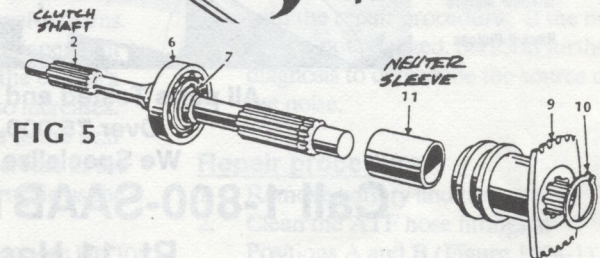
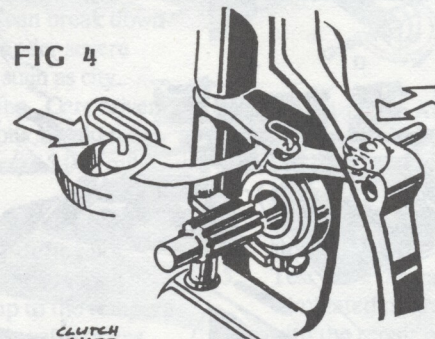
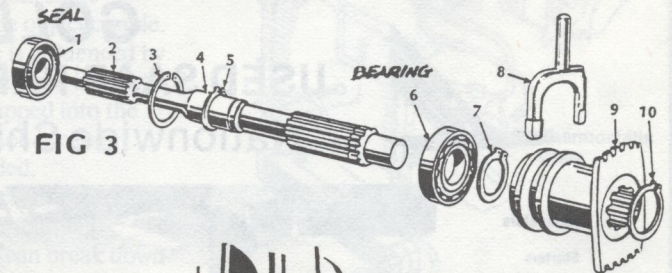
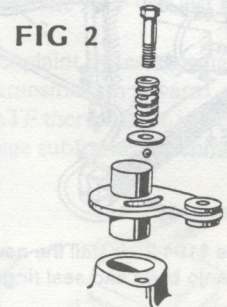
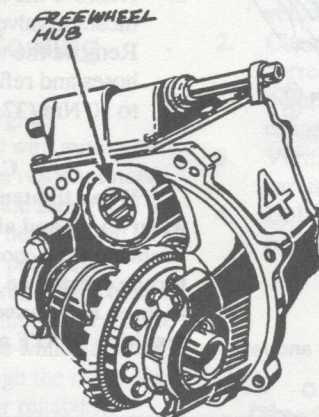
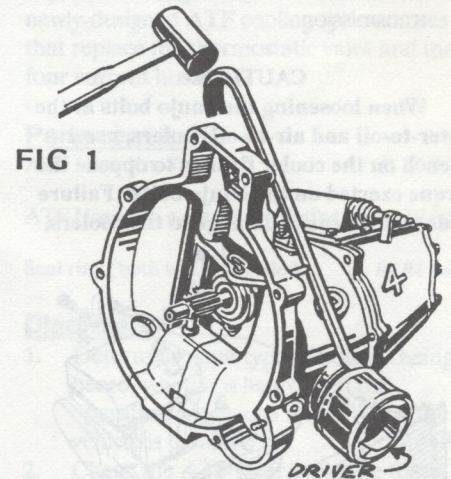
Remove the bolt on top of the bell housing that holds the freewheel control (see Fig 2). Remove bolt, spring, washer and control. The ball bearing may or may not come out of the bolt hole. Don't worry about it either way.

Using a seal removal tool, remove the front seal from the clutch side of the bell housing (item 1, Fig 3). Using a compressing snap ring pliers, remove the large snap ring behind the front seal (see item 3, Fig 3). Using an expanding snap ring pliers, remove the snap ring at the extreme aft end of the clutch shaft (see item 10, Fig 3). Push the clutch shaft forward, out of the bell housing. Collect the freewheel control fork (item 8) and the freewheel clutch gear (item 9) as the shaft is pushed out.

Now clean everything thoroughly. The bell housing shaft, the gear. Check the bearing--spin it --if it makes any noise, remove the front snap ring and replace the bearing with a new one.

Now is a good time to inspect the release bearing control arm for excess wear at the points shown by arrows. If you find more than 1/16" of wear the release arm should be replaced (we do supply rebuilt arms--see our ad next page). Also check the release bearing--spin it--for noise. Replace it if it is noisy. Now for reassembly.

The freewheel neutering device is a simple sleeve cut from 1" pipe with a pipe cutter, not a hack saw, that is nominally 27mm long. Nominal is the correct term. In some transaxles this is just the right length. Others need a sleeve just a bit shorter due to differences in production tolerances in these transmissions. More on this later. Slip the neuter sleeve on the back end of the shaft, then the freewheel clutch gear. Check that there will be clearance for the aft snap ring to be installed (item 10, Fig 3). If so, remove the gear and the sleeve from the shaft. I assume you have the bearing you want in place on the shaft and that both bearing snap rings are in place. Insert the shaft from the front of the bell housing. Install the large front snap ring. NOW install the neuter sleeve, the freewheel clutch gear and the aft snap ring onto the clutch shaft. See Fig 5.



Replace the side seals on the bell housing. Don't whine about how good they look. Replace them. Now thoroughly clean up the mating surface of the transaxle. Lay a quarter inch diameter bead of hi temp silicone in the groove of the transaxle (see Fig 6). Fill the depression in the inside of the side seals with white lithium grease (see Fig 7). Reinstall the small needle bearing onto the end of the clutch shaft or into the freewheel hub so it does not get lost.

Fit the end of the clutch shaft into the freewheel hub of the transaxle and wiggle the bell housing and transaxle together. Install the bolts and snug the bolts down. Now take a look into the hole on top of the bell housing where the freewheel control used to be. Use a screwdriver or similar tool and check that the gear has about 1mm of fore and aft free play. If it does, torque the bolts (16 foot pounds). If it does NOT, take it all apart and file off the neuter sleeve an appropriate amount until, when you make this check, there IS 1mm of free play. You MUST have this amount of free play to assure that the transaxle does not bind up when it gets hot and everything expands. When you finally get it right, then torque the mounting bolts to 16 foot pound. See Fig 8 for the view into the bell housing.

Now you can install the front clutch shaft seal, the release bearing, and the cap and gasket to cover the hole in the top of the bell housing (we provide a neuter KIT that contains all of the necessary neuter parts--see our ad this page).

Now is a good time to check the condition of the rear transmission mount in the car and replace it if it is cracked, oil soaked or sagging badly. Level the transaxle and add oil until it runs out the oil level plug on the side (about 4 pints of fluid). I recommend AMSOIL 75/90 GL5 transluube, as I have used it for years with no problems of any kind. It also tends to make the gearbox shift easier and tends to quiet them down in time.

FIG 6

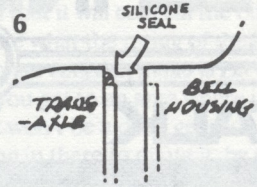


FIG 7

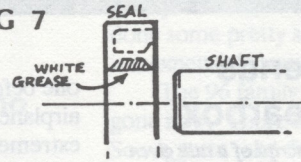
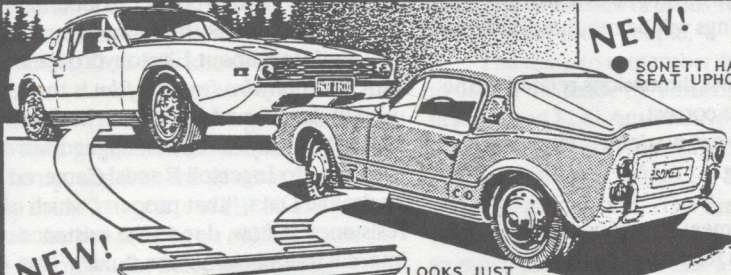
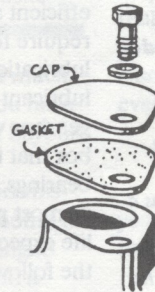


FIG 8



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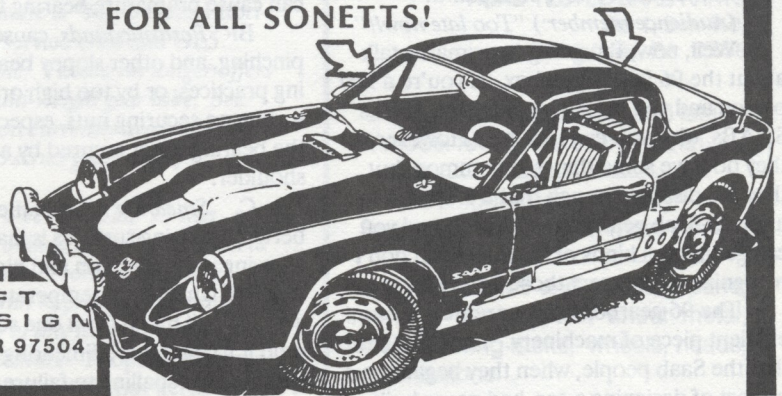
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TECHNICAL TALK

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Debunking legends about the V4 gearbox

The following is an transcript of a talk given by Ted Tucker at the 1985 SAAB convention held in Chambersburg, PA. Although I was at the convention, I was unable to attend Ted's talk, so I sent along my cassette recorder. The resulting tape so impressed me that I contacted Ted to get his permission to use it as the basis of an article for the newsletter.

Ted was more than cooperative, and even provided me with the extensive notes he had used in preparing his talk. Like most of us, I love a good debunking. As one who, for lack of better information, has been guilty of labeling the 96 transmission as a "weak link," the following talk was heartening as well as sobering.

Keep your mind open for this one. Ted was a serious Saab mechanic for over 20 years, and during that time he apparently went above and beyond in his search for the facts about the cars he chose to work on.

Ted Tucker passed away late last year after a long battle with cancer.

Peter McLaughlin

When Carolanne (Curtis) asked me to come up here, I thought we could put a gearbox in the Mule (our Chevy pickup), and the bench, jig, and various tools and show you how to rebuild one. But, having you come to my shop and having me come to Chambersburg is a big difference, and I decided I wouldn't do that. So, rather than tell you how to tear the gearbox apart and repair it, I thought, possibly I could persuade you to treat the gearbox in such a way that you won't have to repair it.

(Audience member:) "Too late now!!"

Well, now, I'm going to primarily talk about the 96 family gearbox. If you're a 900 person and you don't recognize the 96's as SAABs, why, you can take off. However, they do have some things in common, but they are distinct enough that it is foolish to lump all Saab gearboxes together, and you can get into all kinds of trouble if you don't recognize and respect those differences.

The 96 gearbox is an extremely efficient piece of machinery. The reason is that the Saab people, when they began the project of designing a car, had never built

one before, but they'd designed lots of airplanes. And, of course, airplanes are extremely efficient machines, or the damn things wouldn't fly! So, the Saab people were concerned with efficiency, and the gearbox shows it.

Witness the fact that every bearing in the 96 gearbox is a ball bearing, except one. Ball bearings are at least four times as efficient as roller bearings. But, they require four times better care, or proper lubrication. It takes a heck of a lot better lubricant to successfully oil a 96 type gearbox with ball bearings than a 99 type box that is primarily equipped with roller bearings. Let's consider bearing failure and its most probable causes. The calculated life expectancy of any bearing is based on the following four assumptions:

1. That good lubrication in sufficient quantity will always be available.
2. That bearings will be mounted without damage.
3. That all parts dimensions related to the bearing are correct.
4. That there are no defects inherent in the bearing.

Failure to meet conditions 1 thru 4, in whole or in part, can result in:

A. *Spalling*, which is the crumbling of metal. It is caused by incorrect load range, faulty fitting of a bearing, or inadequate lubrication, all of which, singly or in concert, can cause premature bearing failure.

B. *Parasitic loads*, caused by cocking, pinching, and other sloppy bearing mounting practices, or by too high or too low torque on securing nuts, especially where the bearing is not secured by a shaft shoulder.

C. *Smearing* is when the oil film between moving surfaces is inadequate, allowing undue friction and high temperatures. High enough temperatures can actually pull metal from one surface and weld it to the other. Smearing leads to spalling, and spalling to failure.

D. Use only first quality bearings and

parts to avoid conditions 3 & 4 above.

The bearing assortment of Saab 95, 6 or 7 gearbox consists of three ball bearings on the Primary shaft (input). The Counter or "intermediate" (Saab name) shaft is mounted in two ball bearings. The Pinion Shaft is mounted in a double-row ball bearing in the rear and one lonely roller bearing in the front supporting the pinion. There are also ball bearings on either side of the differential, for a total of eight ball and one roller bearing. Depending on the year of manufacture, there are either six or eight needle bearings in the transmission. What is startling about this is that we could carry our examination on through the original engine and running gear and find no other roller or sleeve bearings.

That, my fellow Saab-snobs, is dedication to efficiency! It also accounts for a 25HP FWD corn-popper clobbering the world's auto elite at their own game.

Let's talk about Elasto-hydrodynamicism. *Elastohydrodynamic film* is the term used to describe adequate lubrication. Viscosity, always a much maligned word, is, according to Ingersoll Rands' Cameron Hydraulic Data, "that property which offers resistance to flow, due to the existence of internal friction within the fluid." This resistance to flow, expressed as a coefficient of dynamic (or absolute) viscosity, is "the force required to move a unit area a unit distance."

The most widely used system of measuring viscosity is the *Saybolt*, which measures the time in seconds for a liquid to flow from a filled container of specific dimensions through one or two orifices in the bottom of the container. The resulting numbers are units of *SSU* (Seconds Saybolt Universal). The *efflux* (a fancy word for exit or pour) time in seconds is converted empirically to kinematic viscosity in other units.

The foregoing paragraphs are not designed to confuse you. Only to illustrate the fact that to lay people lubrication can be a very slippery subject.

Early on, Saab-snobbers need to

appreciate, or fear (and still do), a history of frequent failure of the 96 gearbox. This, notwithstanding Saab's worldwide reputation for both efficient and reliable design. It was an enigma difficult to explain or avoid:

The gearbox was often referred to as a "weak link" in the car. That is a bum rap. It is not a weak link. It is a very fine machine, but it requires better care because it is a better machine.

After rebuilding several hundred 96 transmissions, I caught on to the fact that "the weak link in an otherwise nice little car" was a cop-out for those who hadn't a clue; or a convenient excuse for those who should have known better and didn't.

The sulphurous smell of 90-140 gear lube caused me to sneak a sample through the Saybolt Viscometer at a local university engineering lab, and it confirmed my suspicion that the unfortunate little guys were literally being strangled to death by lubricants 20 to 100 times more viscous than the EP 80 for which they were designed.

I'm sorry to report that my investigation of the matter turned up several cases of old line, well-meaning, great reputation but sinning Saab dealerships. One was a Saab/BMW dual dealer whose parts man stocked only EP 80-90 in the belief that what was okay for the Bimmer was bound to be good for the Saab. Yet he was putting gearlube into 96s that was 78 times too viscous for the 96 box!!! God only knows how many he killed.

Another case involved a gearbox I'd rebuilt for a gentleman in Maryland. He picked it up, and with the gearbox I gave him my usual 2+ quarts of EP 80 in a jug. He took the box back to an old line Saab dealer I'd known for more than twenty years, (for installation), and the service manager looked at the jug I'd provided and asked, "What's that crap?" (It was written right on the side in grease pencil "EP 80".)

"I don't put any of that in 96 gearboxes, I use 75 weight, that's what all Saabs use!" The owner of the car was really upset about this, so he called me and asked me what he should do. I had him drive to the nearest service station and have the 75 weight drained and the box filled with the EP 80 I'd provided. That's been about five or six years ago. Last Christmas I got a card from him. He thanked me for the gearbox, said it's been going great, and he wants another load of EP 80 so he can change it himself. Now, if he had put 75 weight in there, he would have destroyed it. EP 80 is twenty times more viscous than EP 75!!!!

After finding that out, let's not fiddle around with EP 75 in the 96 gearbox. Twenty times is just too much! The relationship of viscosity from one gearlube to another is obviously not a linear progression. You know, the difference between the

"The 96 family transmissions are all gone now. There are no new ones available, so we gotta take damn good care of the ones we have. There aren't going to be any more, at any price."

Ted Tucker

number 75 and 80 doesn't seem that much. But to find out how it's arrived at, you have to mix the damn stuff and then get a Saybolt viscometer and see what you have.

As I say, if Saab made a bad transmission, if the 96 box is a weakness, I'd admit it. But it's not. Airplane people are going to make very fine things. You won't find a gearbox set up with the type of bearings you find in a 96 made by anybody today, including Mercedes or Rolls Royce. It's just too good for those people.

The thing to remember from all this is to use EP 80 made by Texaco, only. When I first opened Loki Automotive I had a hell-of-a-time finding it. I finally found that Quaker State also refines EP 80. I got about 20 gallons of it. The first time I had to tear down one of those gearboxes, it had so much soot (ash) in it that I said I had to find a better oil.

Finally, I got ahold of a lubrication engineer from Texaco, and man, they've been making this stuff for years and it's great. It's full name is "Multi Gear Lubricant EP 80, for service GL4 and GL5."

[Editors note: Texaco no longer offers EP80, only a multi-weight gear lube. See separate article on currently available lubricants for 96 series gearboxes.]

Question: "I've heard EP 75 was introduced to provide better lubrication at lower temperatures. From what you're saying, is it too thin to properly lubricate a 96 (also 93, 5, & 7) at any temperature?"

Any temperature. People in extremely cold climates will say, "We put kerosene in to lighten it." In extremely cold climates like

the Arctic Testing Circle in Hudson Bay, it is so damn cold that it will congeal the oil solid, I don't care what the rating of the lube is. But if it's gonna congeal, make it EP 80, because when you get to an area where it will be warm, it won't be a dead gearbox. If you put anything in there to dilute it, by the time you drain it out, you probably have done some pretty severe damage. Gearlube is inexpensive, transmissions are not.

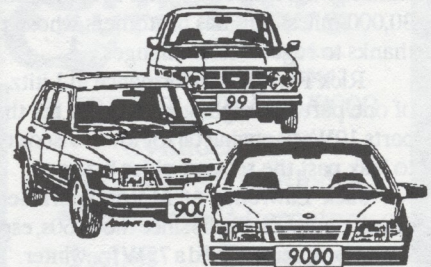
The 96 family transmissions are all gone now. There are no new ones available. So we gotta take damn good care of the ones we have, because there aren't going to be anymore, at any price. Even good used ones are getting a bit scarce. I like Saabs. I've been a Saab-snob since 1962, and I wouldn't have anything else. And I'd like to help everybody. But even if I've made you really ticked at me, I hope I've impressed you with the fact that gearlube is the most essential thing in that gearbox. Change it every year if you want to.

Q: It's that important?

It's that important. Change it every year. I do. Considering where we stand today, do it every year and your gearbox will

Continued next page

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outlast your engine, I guarantee you. And I don't care how hard you treat that gearbox. You take good care of it and it will survive. I rebuilt a gearbox for my son four years ago. He's running a Sonett in F-Production. He won the Southeast Championship in autocrossing three years in a row, plus he's been running hill climbs and other things. He pulled the box this year, and I gave him another gearbox, and yet there is nothing wrong with that original gearbox. It does not need overhauling. It does not need any new bearings. He's going to use it in his 96.

Q: Do you have any experience with

synthetics?

I don't believe in them. If it doesn't say "EP 80," it's not gearlube as far as I'm concerned. *(general laughter)*

I don't want to start arguments with people. It's just that I've seen so many cases where it has done the job.

Q: How about using freewheel?

I love it. But in 1969 Saab went from the 6-roller freewheel to a 10-roller hub to overcome objections from the public about the freewheel being too abrupt. Instead of having six hefty rollers and six hefty springs, they put in ten tiny rollers and two springs

per roller to equalize each other, and it became a very fragile thing. What I do for people who like to use freewheel is get a 6-roller for them. You can't buy a 6-roller unit (complete) new any more. But the rollers, springs and sleeves are still available. I buy a lot of junk transmissions just to get the 6-roller hubs out of them. The freewheel from a 93 will work beautifully in a '73 96 or a '74 Sonett. They're so durable that you can generally just clean them off and put them in and they'll go.

(What followed was a partially inaudible back-and-forth discussion on how to rebuild worn freewheel hubs, even to the point of doing some minor machining. The important point here might be the suggestion not to trash-can a unit just because it looks worn, but try to find someone who could help you put it back on its feet. -P.McL.)

Q: I've been told that not using my freewheel can lead to problems. Since I'm not fond of using it, am I asking for trouble?

Not if it's positively locked out, 100 percent. You get into trouble when the late-style nylon lever atop the trans gets worn or loose, or the hole containing the control rod coming up from inside the box gets elongated and sloppy. It's this slight misengagement that can cause an in-and-out action, and mismeshing and wear to the teeth in the "clutch shaft gear," as I call it. This is more of a problem on the 10-roller unit. Just be sure the lever is in good shape and tight, and you have the control rod T-handle pulled all the way out if you don't want to use the F.W. And to use the F.W., be sure it's all the way in. To make the control even more positive, get a steel control lever from an old 2-stroke to replace the nylon one.

Q: What are your feelings about the EP additives?

I've tested Slick 50 and Moly 2 (molybdenum disulfide). The Slick 50 is great stuff for the 99. If you have a 99 and you're ashamed to back it out on the road with anyone listening, give it a treatment of Slick 50. I did it with one about four years ago for a relative, and I have not had any problem with that gearbox.

Moly 2 is a hardener that they used originally in making steel. It coats the surfaces by a pressure technique in the 96 gearboxes. But you don't want to put in too much. I think the recommended amount for a 96 is two ounces.

V4 Gear Lubes

EP 80, the recommended lubricant for transmissions coupled to Saab's two-stroke and V4 engines, has become very difficult to find as most oil companies have switched to producing multi-weight gear lubes. What are the alternatives? We asked some knowledgeable Saab mechanics what they use.

In the warm climate of Southern California, Bud Clark of J&B Imports still sees plenty of 96s, 95s and Sonetts. Since these cars seldom experience temperatures of less than 50°F, his shop uses Valvoline 80-85-90 weight. J&B customers who want a better lubricant usually request Bel-Ray 85W Gear Saver, so Bud keeps some on hand. Bel-Ray Gear Saver is designed primarily for motorcycles, and it can be purchased from motorcycle shops.

Atlanta, too, is known for warm weather, but the folks at S&J Automotive go with a lighter weight oil. Chris McPherson says they fill their V4 gearboxes with Pennzoil 75 weight gear lube, same as they use in 99 and 900 trannys.

Sports Car Service in Wilmington, Delaware, also uses a 75 weight -- Super Quadralube by Quaker State. Proprietor Bill Jacobson says 75wt works well in the cooler climate where his customers live, but most important is to change the gear lube every 30,000 miles. He has customers whose transmissions have lasted over 200,000 miles thanks to regular fluid changes.

Rick Parr of Parrformance in Lititz, Penna, has his own "witches brew" made up of one part 90 weight gear lube, to get the extreme pressure (EP) properties, and two parts 10W-40 engine oil for lower viscosity. Parr shys away from synthetics as they tend to leak past the seals of older boxes.

Jack Lawrence at Motor Sport Service in Jamestown, NY, has done a lot of development on Saabs since the 1960s, especially the Sonetts. He recommends an 80W-90 for summer use, and a 75W for winter. Though he hasn't tried it, he also says you could possibly run a GP4 or GP5 rated engine oil which contains high pressure additives. Lawrence suggests that you add a little silicone to the gear lube as an anti-foaming agent. Once you have filled the gearbox, add 4 or 5 drops (a short squirt) of a pure silicone spray such as Door-Ease. The silicone helps eliminate foaming in the input shaft area.

West coast Sonett fanatic Jack Ashcraft uses Amsoil synthetic multi-weight. He says it will quiet a noisy transmission, particularly one that has been rebuilt from several used boxes. He also warns that due to viscosity, all transmission seals should be replaced before dumping in a synthetic lubricant.

Saab's V4 drivetrain service manual (p/n 02 90 908) recommends "EP-oil SAE 80", but the latest Saab bulletin on lubricants does not show an EP 80. Instead, the V4 is listed with the 99 and 900 manual gearboxes under "EP 75 Wt Gear Oil", Saab p/n 99 00 754.

Manufacturers contacted about the availability of EP 80 pointed out that a multi-weight gear lube such as an 80W-90, must have the same flow characteristics as a straight 80 weight under SAE guidelines. Consequently a multi-weight gear oil with the first number of 80 should work in a 96 series transmission.

Tim Winker

Specifications, 96 Family Gearboxes							
Function by unit	93-95 2-stroke 3-speed	95-96 2-stroke 4-speed	750GT	850GT & Monte Carlo	Sonett II (2-stroke)	Sonett V4 & III	95/96 V4
# of teeth pinion/ring	7/38	7/38	7/36	8/39	8/39	9/42	8/39
Final Drive Ratios	5.43:1	4.88:1	5.14:1	4.67:1	4.67:1	4.66:1	4.88:1
	Gear Ratios						
1st gear	17.2:1	19.3:1	18.3:1	18.3:1	18.3:1	16.2:1	17.0:1
2nd gear	8.5:1	11.4:1	10.7:1	11.4:1	11.4:1	9.7:1	10.2:1
3rd gear	5.2:1	7.0:1	6.6:1	6.6:1	6.6:1	6.0:1	6.3:1
4th gear	NA	4.6:1	4.3:1	4.3:1	4.3:1	3.9:1	4.4:1
	Road speed in MPH per 1000 RPM						
1st gear	4.1	3.1	4.2	4.2	4.2	4.3	4.2
2nd gear	8.4	7.1	6.9	6.9	6.9	7.3	6.9
3rd gear	11.5	11.2	10.4	10.2	10.2	11.9	11.2
4th gear	NA	17.7	16.1	17.1	17.7	18.2	17.2

Q: Is the gear ratio for a 2-stroke different from a V4?

Yes. If you want to have a lot of fun with a vehicle for autocrossing, put a 2-stroke trans in it. Man, you'll have stump-pulling power, and you can damn near make it fry rubber in third gear. Everyone will say, "Where in the hell did he get that?" (laughter) And it's great because you never need fourth gear in an autocross anyway. I did it for my son in hillclimb. In Chimney Rock hillclimb, it took seven seconds off of his time. [Note: See Specifications chart.]

Q: Some people say not to bother with old "smooth-case" 96 transmissions. How do you feel about that?

I have never seen a case of failure that I could trace to the smooth case itself.

Q: If you've got a spare 96 trans, how do you tell if it's any good before putting it in the car?

When you drain the oil and when you pull the bell housing, if you see a lot of debris in either, it will tell you if it's bad or not. Pull the bell housing and take a look at your primary gear, which is the gear that sits up at the top where your freewheel is. Look inside the teeth in it. See if the teeth are chewed up. That means the F.W. gear has

been kickin' that gear. If it's very bad, then you should consider a check, (diagnostic tear-down). You can take the top cover plate off and see quite a bit without taking too much apart.

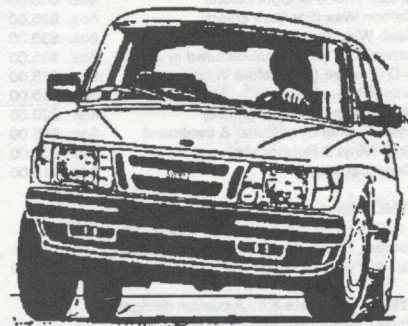
In closing, I'd like to list a few simple truths I know about SAAB 93, 95, 96 and 97 transmissions:

1. Saab factory furnished literature is the ONLY BIBLE on all questions concerning their cars. NOT Dealer personnel! Certainly not the nice kid who pumps gas at the local Shell station.
2. Correct gear lube insures correct lubrication.
3. Ball bearings need very little oil, but the supply must be correct and constant.
4. Too great a quantity also raises temperature due to added friction.
5. Clean oil prevents wear. Change your gear lube every year.
6. A Saab gear lube dipstick, p/n 7862444 is an inexpensive jewel. Order one through your dealer.

Also published in the New England Sonett Club Newsletter.

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Road Test Results

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Model	0-60	1/4 mi. (sec./mph)	Top speed	Magazine	Issue
93					
'86 93	24.75	23.02 @ 57.5	74	CD	9/56
'87 93	27.2	23.0 @ 57	75	R&T	5/57
'88 93	28.5	23.7 @ 55	70	CD	5/58
'89 GT750	18.8	21.3 @ 63	NA	CD	5/58
" w/Tuning Kit	13.9	20.0 @ 69	NA	CD	5/58
'89 GT750	15.2	18.5 @ 66	88	R&T	9/58
" w/Tuning Kit	12.0	17.5 @ 70	95	R&T	9/58
96/95					
'61 96	24.5	22.0 @ 57	80	R&T	1/61
'61 96	25	23 @ 58	73	CD	2/61
'61 95	29	23.5 @ 56	NA	CD	2/61
'63 850GT	17.8	21.5 @ 64	90	CD	7/63
'64 850GT	21.2	21.9 @ 61	87	R&T	4/64
'66 96 Special	17.7	21.3 @ 65	90	CD	3/66
'67 96-V4	16.5	19.9 @ 65	95	R&T	9/67
'67 96-V4	14.2	19.4 @ 68	NA	CD	10/67
Sonett (97)					
'68 Sonett V4	12.3	18.6 @ 71.3	94	CD	7/68
'68 Sonett V4	14.0	19.5 @ 70.0	95	SCG	8/68
'68 Sonett V4	13.7	18.7 @ 69	97	R&T	9/68
'70 Sonett III	11.9	18.7 @ 71.6	96	MT	6/70
'70 Sonett III	12.2	18.5 @ 72.5	101	SCG	8/70
'70 Sonett III	14.4	19.0 @ 73	100	R&T	10/70
'71 Sonett III	11.8	18.2 @ 79	105	FT	7/71
'72 Sonett III	13.4	18.6 @ 70.0	95	R&T	7/72
'74 Sonett III	14.1	18.8 @ 72.0	92	FT	2/74
99					
'69 99	14.4	19.5 @ 68.4	99	CD	7/69
'69 99	15.7	20.2 @ 68	91	R&T	8/69
'70 99E	12.6	18.8 @ 71.8	102	CD	4/70
'70 99E	14.8	20.0 @ 70	92	R&T	8/70
'72 99E-1.85L	12.7	18.4 @ 72	98	R&T	2/72
'73 99EMS	11.9	18.3 @ 69.5	NA	R&T	1/73
'74 99LE Wagonback	12.0	19.0 @ 75.0	108	R&T	8/74
'76 99EMS	9.2	17.2 @ 79.9	106	CD	8/76
'78 99EMS Lambda	NA	18.0 @ 73.0	107	CD	7/77
'78 99 Turbo	9.5	17.5 @ 81.9	110	CD	10/77
'78 99 Turbo	9.1	17.0 @ 83	118	MR	2/4/78
'78 99 Turbo	10.8	18.8 @ 78.7	NA	MT	3/78
'78 99 Turbo	9.0	17.1 @ 83.0	114	R&T	7/78
900					
'79 900 Turbo 5dr	9.6	17.5 @ 80.0	114	R&T	4/79
'79 900 Turbo 5dr	9.9	17.7 @ 80	111	CD	4/79
'79 900 Turbo 3dr	8.8	17.2 @ 80.8	NA	MT	5/79
'81 900 Turbo 4dr A/T	10.2	17.5 @ 78	109	CD	4/81
'81 900 Turbo 4dr A/T	11.4	18.3 @ 75.5	107	R&T	6/81
'82 900 3dr	13.8	19.3 @ 70.0	105	R&T	12/81
'82 900T 3dr 5spd APC	9.3	16.9 @ 83	113	CD	5/82
'82 900T APC, regular gas	10.8	17.9 @ 77.5	116	R&T	7/82
" , premium gas	10.0	17.3 @ 79.5	NA	R&T	7/82
'85 900 Turbo 16v	8.5	16.5 @ 83	128	CD	12/84
'85 900 Turbo 16v	8.6	16.5 @ 85.0	124	R&T	1/85
'85 900S	10.0	17.4 @	104	CD	
'89 900 Turbo Convertible	7.3	15.8 @ 87	123	CD	2/89
9000					
'86 9000 Turbo	7.6	15.8 @	124	R&T	12/85
'89 9000CD Turbo	8.3	16.3 @	130	CD	12/88
'90 9000CD Turbo	7.94	16.32 @ 89.9	132	SCI	9/89
'90 9000CD 2.3	8.5	16.6 @ 83	124	CD	6/90
'90 9000CD 2.3	9.7	17.1 @ 81.5	125	R&T	6/90
'91 9000 Turbo	6.4	14.9 @ 93	142	CD	2/91
'91 9000 Turbo	6.8	15.4 @ 93.0	135	R&T	2/91
'91 9000 Turbo	6.72	15.32 @ 93.3	142	SCI	5/91

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Tuning Kit 90 177HP	595.00	470.00
Tuning Kit 86-89 170HP	312.50	195.00
Sport Exhaust CD 89 -	364.00	310.00
Sport Exhaust 5dr 89 -	311.00	260.00
Sport Exhaust 5dr 86-88	327.00	275.00
Rear Spoiler CD 89 -	375.00	300.00
Rear Spoiler 5dr 87 -	304.50	240.00
Rear Louver 5dr 86 -	295.00	235.00
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Floor Mats	115.50	90.00
Wood Dash Inlay	995.00	875.00
Euro Headlite Kit 86-89	425.80	340.00
Cargo Mat 9000 4dr 89 -	92.00	70.00
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Silver Spoke Wheels 88 -	170.00	135.00
Tuning Kit 90 - 185HP	800.00	650.00
Tuning Kit 86-89 170HP	312.50	210.00
Sport Exhaust 87 -	376.00	275.00
Chassis Kit 79 -	936.50	725.00
Rear Louver 3dr	295.00	225.00
Floor Mats	103.00	80.00
Cassette Holder	34.00	25.00
Sunroof Wind Deflector	83.20	65.00
Euro Headlite Kit 87 -	430.10	345.00
Euro Headlite Kit - 86	477.60	375.00
Cargo Mat 3dr 81 -	69.20	55.00
Hood Protection Strip	42.00	32.00
Water Pump 81 -	76.60	60.00
Air Outlet Covers	42.00	33.00
Headlites 87 -90	150.00	110.00
Rear Spoiler 3dr 79 -	197.00	145.00

95-96-97

Center Grille 95/96 69 -	35.90	28.00
Rear Transmission Mount	32.90	25.00
Mudflaps 95/96	14.60	11.50
Manifold V-4 2BL	383.00	295.00
Rear Lens 95 69 -	26.90	20.50
Timing Gear Set V4	181.00	140.00
Handbrake Cable 95/96	22.25	17.50
Door Seal 95/96	42.40	32.50
Front Park Lens 69 -	30.40	24.00
Rear Lens 96	38.00	29.00
5 Blade Fan - V4	45.80	35.00
95-96 Windshield 68 -	151.50	120.00
95-96 Front Fender - 68	144.50	115.00
95-96 Front Fender 69-71	184.50	145.00
95-96 Front Fender 72 -	175.00	135.00
95-96 Front Muffler - V4	49.40	37.50
Engine Oil Dipstick V4	13.75	11.00
Sonett III Center Grille	125.00	95.00
Balance Shaft Bearings - V4	39.95	30.00
Rear Brake Shoes - Girling	29.95	22.00

99

Turbo Manifold	402.00	320.00
Water Pump	117.50	90.00
Front Grille 75-80	94.50	75.00
Head Lamp Doors 75-80	34.70	27.00
Primary Gear	201.00	150.00
Shift Coupler	55.00	42.00
Slave Cylinder - New Style	71.10	55.00
Throw Out Bearing 76 -	23.75	18.50

OSRAM BULB SALE

H-1 55 Watt	6.95	4.25
H-2 55 Watt	6.30	4.00
H-3 55 Watt	6.95	5.00
H-3 100 Watt	16.75	12.00
H-4 60/55 Watt	10.95	9.00
H-4 100/55 Watt	17.50	12.00
H-4 100/80 Watt	17.95	12.50
9004 65/45 Watt	13.60	10.00

SPECIAL ITEMS

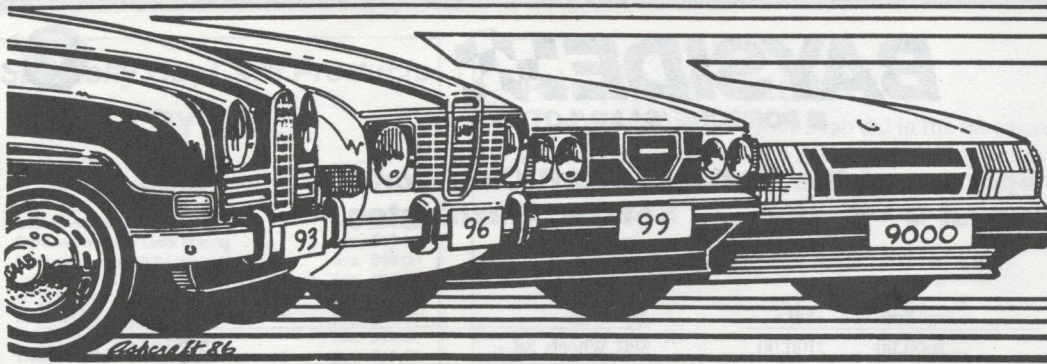
Blaupunkt "Monterey"	365.00	110.00
Castrol 75W Gear Lube	2.80/pt.	1.75/pt.

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CLASSIFIED ADS

CLASSIFIED AD RATES

Ads offering parts or SAABs for sale or wanted are available to members and non-members. Ads are limited to 25 words, plus name address and phone number. Ad copy will be abbreviated and excess words deleted where possible. Enclose sufficient funds with your ad, we do not bill. No ads will be taken by phone. The Classified Ad rate is as follows:

	Members	Non-members
CARS FOR SALE	\$10.00	\$15.00
PARTS FOR SALE	\$5.00	\$7.50
WANTED ADS.	\$2.00	\$3.00
COMMERCIAL ADS (Parts & Services)	\$10.00	\$15.00
EXTRA WORDS (each 5)	\$1.00	\$1.50

DEADLINE: The 15th of each month for the following month's issue, e.g. January 15th for the February issue. Newsletters are mailed the first week of the cover month.

COMMERCIAL DISPLAY ADS: Contact the editor for rates and info. Deadline, the 10th of each month for the following month's issue.

Sonetts For Sale

'73 Sonett III, Orange (Sunset Yellow), good condition, less than 90k mi, extra engs, trans & mags, 2-bbl manifold w/Fomoco carb, cover, manuals. New battery, ft brakes, stereo, exh. \$3,300 obo. Mark Steverton, 608/849-5532 after 3pm CST, 215/882-9190 after 5pm EST.*

'72 Sonett III, runs & looks great, sunroof, stored winters, Red. \$3,000 or trade for 93/95/96. Jim Grayson, PO Box 491, Pewaukee WI 53072. 414/691-9137.

Parting out '72 Sonett w/factory air, 65k mi. Complete except rims, rear glass & hardware. Vinyl interior is in very good shape. Mark School, 313 E Greenfield St, Appleton WI 54911. 414/731-5289.

'69 Sonett V4, 1st place at '88 Natl Convention. Red, many extras. Labor of love since '77. Photos avail. \$6,400. Bert McNamee, 122 Barrett Ln, Wyckoff NJ 07481. 201/785-9090 days, 201/891-0849 eves.

'68 Sonett V4, good cond, rblt eng/trans & brake sys, new tires, Sonett III mags, lsy cam, Weber carb, electric fan. Owner Saab mechanic. \$2,950. Rich Olin, 3400 Hanover Av, Richmond VA 23221. 804/355-4586.

93s, 95s & 96s For Sale

'72 95, Dk Green, no rust. Nice ext./very nice int. Reliable & fun. Recent work and many extras. Have all receipts. To good home only! \$2,400. Rob Robertson, 1 S Cleveland St, Wenatchee WA 98801. 509/663-8851 eves.

'72 96-V4, Red, Much new & rebuilt. No Rust. Drive this one home. A very nice car. \$2,500. Jack Ashcraft, 2201 Woodlawn Dr, Medford OR 97504. 503/779-0731.

'72 96, originally from N. Carolina. 68k mi, orig Yellow paint, Monte Carlo dash w/tach, new Weber carb, new shocks & clutch. Very gd cond in/out, no rust, garaged. \$2,000 firm. Joel Bernstein, New York NY. 212/714-1520 W, 914/423-8538 H.*

'69 96 w/'73 Sonett V4 engine & wheels. Weber carb, excellent interior, runs well. Spare engine & trans, lots of extra parts. \$800 obo. Noel Einolf, 7519 Tanglewood Rd, Richmond VA 23225. 804/320-2371.*

'68/69 96 V4 Deluxe. Mech excellent, floor needs work. Many spares incl engs & gearboxes, body, suspension, electrical and hydraulic parts. Must have \$600 for all. Ethan Millrod, Putnam Vly NY 914/528-6072 or 212/475-7110, leave message.

'67 96 Monte Carlo, totally restored mechanically, needs paint. Like new; talk to my mechanic, I'm talking to the tax man. \$7,000 invested, asking \$5,750. Tom Frost, San Diego CA. 619/578-9450 W, /739-0896 H.*

'63 96, very nice Blue car. New tires, exhaust, battery, lots of rebuilt items and lots of spare parts. No Rust! \$3,750. Jack Ashcraft, 2201 Woodlawn Dr, Medford OR 97504. 503/779-0731.

'60 93B, 850GT eng, oil injection, 3-carbs, duals, Konis, 4-spd, new Michelins battery, disc brakes. Loos, runs great, regularly driven. \$3,200. Gordon, 404/425-0707 W, 404/973-4263 H.*

2-Stroke & V4 Parts

'70 96 parts: Front lens, \$5. Rear lens, \$5. Backup lens, \$3. 4 steel hubcaps, excellent condition, \$5 ea. Lug bolts, \$1 ea. Michael D'Aleo, Box 235, Second St, Erwinna PA 18920. 215/294-9297.

'73 Sonett III parts: Body 'glass GC, 2 doors \$100 ea. Good mech, new MSS clutch. Exc complete interior, complete car - have all parts+. Chris Ludwig, 6 Austin Dr, Rochester NY 14625. 716/381-6520.

2-bbl carb to single manifold adaptor plate, \$20. 2-bbl carb air cleaner kit, \$20. 95/96 turn signal lens, early amber/clear, \$10. Outer boot, 95/96 to '65, \$12. Sonett service manual supplement, \$15. V4 drivetrain manual, \$15. All prices +UPS. Many more parts available. Monty Tarr, Rt 1 Box 385, Catlin IL 61817. 217/443-7402 days, 217/427-5203 eves.

99s & 900s For Sale

'88 900 SPG, 80k mi, runs & looks great. \$14,000. Barry Ling, 5082 Rolling Ridge Dr, Seville OH 44273. 216/722-2354.

'84 900 Turbo, White/blue 3dr, 121k mi, 16k on factory rebuilt 5spd, many new parts & acc: sway-bars, Sport exhaust, Konis, cruise, factory Clarion w/EQ. Solid car, looks great! \$4,300 obo. Lawrence West, 72 Hawthorne Av, Glen Ridge NJ 07028-2025. 201/743-2343 leave message.

78 99 Turbo, Red/Red, 190k mi, fresh head, runs well, feels solid & tight. No oil, no smoke, oil changed every 2-3k. Many new FI parts. 60k on rebuilt 4spd. Needs: brakes, front susp bushings, body work (rust) and tires. Make me an offer, it needs a good home.
Bart VonZastrow, 215 Green St,
Schenectady NY 12305. 518/372-1287.

78 99 Turbo, solid, rust-free car, Incas, great shape w/good interior, needs minor body work & paint, \$1,500. Dave Marsh, 4601 E Piedmont Rd, Phoenix AZ 85044. 602/893-9405 or 602/220-3811.

78 99L 2dr, 157k mi, perfect body, good interior, excellent engine, new paint, maintenance records, sheepskins, cover, soccerball wheels, AM/FM cassette, extras. \$3,550. Jess Jessup, PO Box 474, Waterloo IN 46793. 219/837-7376 or/420-2277.

78 99L 2dr, 98k mi, White, 2nd owner, tach, AM/FM, gas shocks, runs very strong, extra parts. \$900 obo. Newsletters & brochures from 1976-87, make offer. John Chichester, 4475 W 165th St, Faribault MN 55021. 507/334-5737.

78 99, 4spd, Silver, runs, some rust, needs paint job, Burgundy interior in fair cond. \$600. Carla or Ed McElwain, PO Box 41, Westminster MD 21157. 301/857-0481 H, 301/876-7732 W.

74 99LE 2dr, 4spd, 60k mi, Green, new paint. New tires, front brakes & wheel brngs. Good running condition, recently smogged. \$950 obo. Must Sell! Peter Intrator, San Jose CA. 408/995-5342.*

Early 99 Alum, headlight bezel, right, \$8. Inner drivers, 900 #8722472, \$35 pr. Timing chain & tensioner, B engine, \$30. Other parts avail, all prices +UPS. Monty Tarr, Rt 1 Box 385, Catlin IL 61817. 217/443-7402 days, 217/427-5203 eves.

99, 900 headliner kit comes with glue, 3½ yards of material and complete instructions, \$87.50. Other parts available. Trollhattan Motors, Inc., Baltimore MD. 301/682-4688 or 1-800-32-TROLL. Evening & Saturday hours.

Your Saab manual transmission rebuilt from \$795. Includes replacement of bearings and seals and set to factory specs. Why buy used and not be sure? Call for details. Freight additional. Mastercard & Visa accepted. Trollhattan Motors, Inc., 310 George Ave, Baltimore MD 21221. 301/682-4688 or 1-800-32-TROLL. Evening and Saturday hours.

99 for parts, lots of good parts, alloy wheels, 72 99, perfect body, not run in 16 years. George Lelenfal, 8120 Kolb, Allen Park MI 48101. 313/928-3312.

"B" head, fully machined, \$350. '76 trans, good cond, \$300. '87 Dk Grey leather seat parts. 2 Pirelli P6 VRs, 50% tread, \$70 pr. 76 misc lenses, misc turbochargers. Dave Marsh, Phoenix AZ. 602/893-9405, 602/220-3811.

Parting out '80 900 Turbo motor: Head - valve job & resurface, \$250. Turbo, 9k mi, only Mobil 1 used, \$250. Waterpump shaft, \$125. Many other parts. Robert Houllahan, Providence RI. 401/272-5442.

99 hood, nose hit, repairable, FREE, you pick up. Norman Sproch, PO Box 1312, Muncie IN 47308-1312. 317/286-4928.

Wanted, All Models

For '67 Monte Carlo 3-cyl: Water pump, Monte Carlo fender emblems, NOS door seals & interior material (doors, seats, carpet), exhaust system, and any Monte Carlo parts. Scott Piloian, 3531 Narcissus Av, Sunford FL 32771. 407/323-5063.

Factory shop manuals for '84 900 Turbo, Nokia 185/65x15 snows (mounted or not), 8-spoke alloys, part #0243337. Bart VonZastrow, 215 Green St, Schenectady NY 12305. 518/372-1287.

Shop manuals for '88 9000S. Also center front armrest in Bokhara Red cloth for 88 9000S. Kevin Carey, 5343 Monte Bre Cres, W. Vancouver BC Canada V7W-3A7. 604/925-3383.

'81-82 900 Turbo parts car, or could use parts from most any 900. Joe Furlong, 18708 2nd Ave NW, Seattle WA 98177. 206/542-1013 wknds.

Inexpensive 96-V4s to place back in service. Many families are waiting to adopt. Please help! Brian Davitt, 507 Navarino St, Algoma WI 54201. 414/487-5209.

96 trans tool p/n 78 41 22(4) "Pinion Shaft Arbor", to buy (\$25?) or borrow (to copy). Peter McLaughlin, 1804 Grant St, Evanston IL 60201. 708/869-0443.

99, 900, & 9000

Parts & Accessories

Parting out '78 Turbo: Oil cooler w/hoses, \$35. tachometer, \$30. Front lens assy, \$25. Rear seat headrest, \$20 pr. Turbo radiator fan, \$60. Steering wheel, \$20. Speedometer, \$20. 77-80 sedan rear lens assy, \$10. 72-76 front lens assy, \$10. Many other 78 Turbo parts. Michael D'Aleo, Box 235, Second St, Erwinna PA 18920. 215/294-9297.

Hella European headlights, \$225. 5 wheels & tires; 4 Carroll Shelby, 1 slightly bent Inca, 2 Comp T/A, 3 new Dunlops, all for \$150. Robert Houllahan, Providence RI. 401/272-5442.

Used micro-fiche reader, excellent condition. Compatible w/Saab micro-fiche files, 11"x14½" screen, \$75. John Ogilvy, 104 Whetstone Ct, Durham NC 27703. 919/596-4077.

Parting out: fifteen 99s and twenty-three 900s, 1973 thru 1988; one 1986 9000. New OE sunroof deflectors, 9000 only, \$39. Quantity discounts. Rod Beckner, 604 East First St, Albany OR 97321. Tele/fax 503/928-6351.

!! THESE SALES ARE BRAKING ME !!

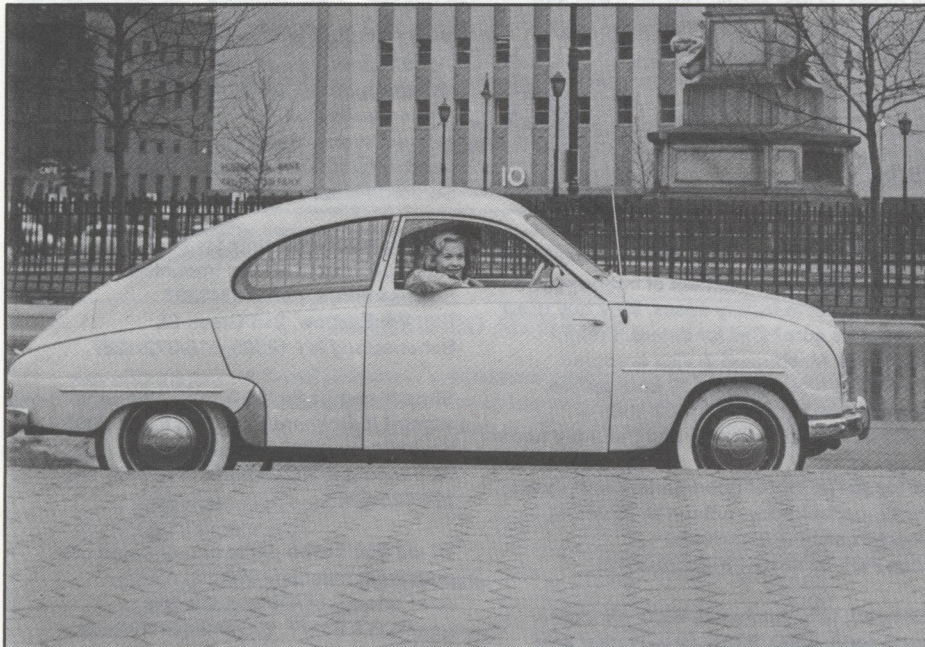
The testing is over and the results are even better than we had hoped! If your disc brakes are squealing, we have the proper fix. Put away the "Blue Goo" and Hi-Temp grease. Our **NO-NOYZ** shims have **completely quieted even the worst squealing brakes** we could find! They are easy to install, and unlike those thin aluminum shims they will last the entire life of the pads, even to 100,000 miles! Made of strong Stainless Steel bonded between two layers of a special Polymer material, **NO-NOYZ dampen all the noise out of the pads**. Specially made for us in Belgium, the quality is better than any other product on the market. Each shim is matched to the pads for a perfect fit. Priced around \$15 a set, they will remove or prevent brake squeal on any car. Now you won't have to tint your windows extra dark to avoid those embarrassing looks in traffic. Make **NO-NOYZ** shims the final step in your brake job, or add them to your existing pads to stop the squeal now! Available for most domestic and import vehicles. **A few minutes and a few bucks will mean years of peace and quiet!**

Manufacturing costs have risen twice and we held our prices, but they are going up again. Still, we are offering you one more chance to **buy our Stainless Steel brake lines and beat the increase!** You'll love what they do for your brakes, and the savings will pay for a set of **NO-NOYZ** shims. Until July 4th, a set of four stainless lines are just \$69 for 99/900s, and \$89 for 9000s. These lines are easy to install, work great and last forever! Sets are on the way for 94 - 96 and Sonnett, so order now and get the old price. These are the good ones!

GROUP 6 PERFORMANCE

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HISTORY OF THE THREE CYLINDER TWO STROKE



SAAB Invades the USA

Copyright 1991 by Simon DuStroke

In the mid Fifties it was fashionable for the struggling European auto companies to export to the, then rich, United States. Several of these companies screwed up so badly that their names are still laughing points today. Needless to say Saab was eager not to be one of these.

At first things did not look promising. There had been discussions with a firm about importing 92s but this had come to nothing. Ralph T. Millet, despite being an important part of the Saab USA story, was himself not yet convinced that Americans would buy a two stroke car. To have a chance at success, Saab decided to concentrate its efforts in New England. This would avoid the catastrophic results other European companies had achieved trying to sell and service a few cars over whole areas of the United States. To set this in motion, Saab sent three 93s, one a cutaway, and a Sonett to the International Auto Show in New York in April 1956. (One 93 was outside as a

demonstrator.) Many took the car's cheeky personality and unusual engine to be a novelty and status symbol. Millet, now President of Saab Motors, Inc., set up shop in New York City but shortly moved to Saab's port of entry, Hingham, Massachusetts.

What Saab needed now was to do something spectacular to draw attention to its great car and the Great American Mountain Rallye was decided upon. This was a three day event held in New England covering about 1400 miles. On the second floor (!) of the New York warehouse three demonstrator 93s (white, grey and light green, if you must know) were converted for the Rallye. Despite very strong opposition from the factory, five of the drivers were Americans, the famous Rolf Mellde being the sixth. The competition was formidable -- Jags, Porsches, big Healeys, Volvos, Triumphs, MGs, DKWs, VWs, Mercedes and American cars as well, 63 in all. The competition was tough but the weather was ferocious! It was a resounding victory for Saab. Wehman/Braun finished first overall;

in class Saab finished 1st, 3rd and 4th and won the team prize. Saab had its first Big Splash in America!

The first major shipment of cars arrived at the Port of Boston in December of 1956. And therein lies another famous Saab story. Due to a fuss with customs, Millet had to get the cars off the dock immediately. He grabbed some students, each of whom claimed owning a driver's license (in truth, some did), to move the cars to the depot in Hingham. So far so good. Before shipment, the engines had been very liberally oiled. When all these cars were started, the smoke was so dense someone called the fire department. The students were soon racing about in the chaos and before the deed was done two of the cars had been crashed (no one hurt).

As advertising is very expensive, Millet used Saab's seemingly endless racing success and Swedish business news items to promote the cars. Saab Soundings, the company's newsletter to Saab owners, was always full of the latest victories which included everything from rallies to ice racing to Little Le Mans.

Even the Daughters of the American Revolution helped out by taking exception to a factory picture of a couple sleeping in the easily converted 93. The problem was the woman involved lacked a wedding ring. All this was invaluable in creating the image of the car as a liberal and a winner.

The Saab 93 series was a great success in America. Imports rose from 295 cars in 1956 to 6,176 in 1959. Owners loved their Saabs! The 1958 Owner's Survey revealed 94% were satisfied with their Saabs. An impressive result.

Next Time: That Wonderful Engine

Simon DuStroke

MEMBERSHIP/SUBSCRIPTION

(Use also for Change of Address)

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SAABS CURRENTLY OWNED _____

(i.e. '84 900 S 4dr. automatic / '78 99 GLE 5dr. 4-spd / '72 Sonett III / '68 96-V4 Deluxe)

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Annual Membership fees for the SAAB Club of North America/NINES are as follows:

First Year \$29.00
 Renewal \$25.00

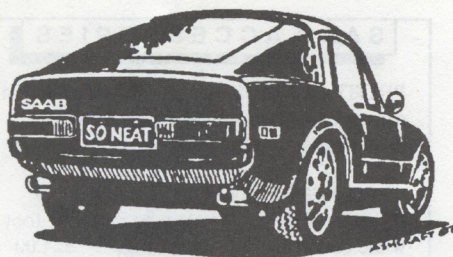
Canadian add \$4.00U.S.
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Please check appropriate box(es)

(Canadian and International -- Money order or check payable on a U.S. bank only. Cash OK.)

First year members receive two recent back issues of NINES and two SAAB Club stickers.

MAKE CHECKS PAYABLE TO "THE SAAB CLUB"



Rear View

If you read last month's column, you know that there were computer problems at Saab Club HQ. As it turned out, the problem itself was fairly minor, but the solution required quite a bit of work, and we're not certain that it has been fully resolved. The computer that holds the mailing list started giving trouble, and Joan had to attempt a reconstruction of the list from several hundred renewal postcards, membership forms and little pieces of paper with addresses on them.

Take a look at your address label on this issue, particularly if you renewed or sent a change of address since the end of January, and let us know if there are any errors. Also let us know if you are getting more than one issue, or if newsletters are being sent to more than one address.

The mailing list is being transferred to another computer which will make it easier to locate your record for updating.

On the subject of the mailing list, several people have asked why we don't publish a directory of members. The primary reason is that those directories are often "borrowed" by companies who want to target you for special mailings. If you're like me, you probably get enough junk mail already. I don't appreciate having my mailbox stuffed with flyers and catalogs whose direct path is the trash bin.

The Saab Club mailing list is not for sale for the same reason, though we have occasionally done a special mailing for companies that specialize in products for Saabs. Like advertising in the newsletter, the club charges for this mailing service, but only after yours truly has decided that the members might appreciate the product or service to be advertised. We have only done this about once a year. A check-off on the renewal form will eliminate your name from any special mailings if you prefer not to receive that type of advertising.

A few years ago we had a Saab Club Assistance Network (SCAN) in which members could volunteer their addresses and phone numbers if they were interested in helping other members with advice, parts, or even a place to stay if another member suffered breakdown on the road. With the new mailing list program, SCAN will be re-established. There will be another check off on your renewal form if you want to be a part of the network.

You may have noticed a slight change in this issue -- the newsletter is now laid out with the assistance of PageMaker 4.0 on a 386/20 Gateway computer. As I get used to the latest version of PageMaker and associated programs, look for further subtle changes.

The 286/10 that had been used for layout has become the bookkeeping machine, and the overworked Commodore 128 finally gets a well deserved retirement. The C-128 has actually been a pretty reliable machine for the past five years -- operator error and lack of places to turn for solutions have been the biggest problems.

I don't know if it's the recession, bank failures, or what, but there have been quite a few returned checks in the past six months. As a result, we will now be waiting two weeks between the time checks are

deposited and updating the mailing list to allow checks to clear the bank. I realize it is an inconvenience caused by the irresponsible actions of a few, but it will save us some work in searching the mailing list for the culprits.

Saab produced their last two-stroke engine over twenty years ago, but the stroker has been back in the news the past few years due to technology introduced by Ralph Sarich and the Orbital Engine Company of Australia.

Chrysler Corporation recently announced they are going ahead with plans to produce a two-stroke engine based on the Orbital design. Chrysler has contracted with Mercury Marine to build engines for both automotive and marine applications. The Pentastar company's Phase II two-stroke engine has three cylinders, displaces 1.1 liters and is rated about 100 hp. Once in production, look for a 1.5 liter 3-cylinder in a vehicle weighing about 2500 pounds.

"[Chrysler's two-stroke] is not inherently a small car engine," says Jason Vines, engineering public relations manager for Chrysler corporation. "It has applications in larger vehicles as well."

This means the possibility of larger two-stroke engines, including a V6. Chrysler hopes to have a two-stroke powered car on the market by the mid-'90s.

At the press conference announcing the new engine, Chrysler had a '65 SAAB and an '89 Trabant on display as examples of cars with two-stroke powerplants.

There is a Barber/Saab race in conjunction with the IMSA GT at Portland the weekend before the convention in Seattle. I'm planning to be there, followed by a few days touring the Northwest before the convention. Hope we cross paths!

Tim Winker, Editor

NINES

The SAAB Club Newsletter
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May 1991

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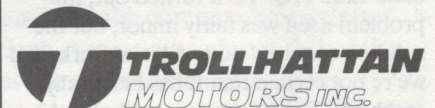
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