

THE SAAB CLUB

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of AMERICA

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our Newsletters useful and improve
ed, and worthy of your support.*

JUL 1981

DEDICATED TO SMALL-
ENGINED SMALL CARS &
ENERGY CONSERVATION

SAAB Clubs of North America Publisher: Jeff Delahorne, 5805 Oneida Street, Duluth, MN 55804 (218) 525-3253
Consultants: Dick Grossman, Jack Ashcraft, Carolanne Curtis, Andy Buc, Ted Tucker

MEMBERSHIP/SUBSCRIPTION

Newsletter #95, our 78th multipaged monthly. Dues for membership/subscription are \$10 for the first year, including two back copies, 12+ tech sheets and emblem. Renewal dues: \$8.00. Renewal notification will be stamped on the open rectangle at the top of this page. A treasurer's report will be made three times a year. This is a non-profit organization.

Or: a three-ringed binder with a collection of back articles and tech sheets is available for \$6.00 postpaid. Or, 30¢ one issue.

Always specify: 96, 97, 99 or 900 and year, for appropriate sheets.

LOCAL CLUB NEWS

CHICAGO SAAB CLUB PICNIC--will be Aug. 8, Saturday, 10:30 am to 4 pm at Dam #1 on Dundee Rd. (Rt. 68) ½ mile east of Milwaukee Ave. (Rt. 45), north of Willow Rd. The picnic area will be Grove #2. There will be a parts exchange, tech' demonstration and instruction. Bring your own lunches, the club will supply ice, etc. Also door prizes and awards. All Saab owners within reach are invited and as an added bonus, Dick Grossman, the "Detroit Dragon-slayer" will be there. For more info, call Paul Niedringhaus, 446-4271 or Dick. G. 743-6742.

SAAB OWNERS' CLUB OF CANADA--The Annual Fun Rally and Corn-Boil will be held on Sunday August 30. The rally will be a simple mileage-to-turn type driving through picturesque countryside to finish at Doug Katto's for fresh-picked corn off the stalk and other refreshments to be brought by those attending. The rally will start from Knob Hill Farms, Hwy 7 at Woodbine in Markham, Ont. First car out at 1 pm. All non-member Saab owners are welcome, and please advise Grant Heaphy, 416-297-4039 or Brian Girling, 416-297-4536 if you plan to attend. Registration opens at 11:30 am.

The monthly meetings of the Saab Owners' Club of Canada are held at 8 pm the third Wednesday of each month at the North York Public Library, 35 Fairview Mall Dr., Willowdale, Ont.

MINNESOTA SAAB CLUB--had their most successful meeting ever in June with 16 members present and 96, 99, 900, and Sonetts all represented. There will be another fix-in on Saturday, July 18, at Dick Wagenknecht's home, 16074 2nd St. N., Lakeland. The July meeting will be at Shakey's Pizza, Snelling and Larpenteur, on July 20, Monday, at 8 pm. Arne Mjelde, SAAB-Scania rep, has indicated he will attend unless last minute scheduling changes force him to cancel.

ROCKY MOUNTAIN SAAB CLUB--will next meet at 7 pm on Wednesday, July 29, at Jim Paris Tires, 4100 E. Kentucky in Denver. The guys there are well-versed in the performance aspects of different tires and have agreed to walk us around the shop and fill us in on what's new in tread designs, materials, profiles, and handling characteristics. Jim Paris Tires is just off Colorado Blvd., behind the Pester station north of Deane. Note the meeting time is 7:00 pm, earlier than normal.

The RMSC Scenic Tour has been shifted to Sat. Aug. 8. We will leave the Village Inn at I-25 and Belleview in S. Denver at 8 am sharp. The route will go south on I-25 to Colorado Springs, west up Gold Camp Road to Cripple Creek, Goldfield, and Victor, then south through Phantom Canyon to Florence. Return to Denver is via Penrose and Colo. Springs. Total distance is just over 225 miles, so allow most of the day.

The Club's mass entry in the local Friday Night Rallye Series will be on Friday, Aug. 21. Meet at the Handy Dan Hardware Store at Pecos and the Boulder Turnpike at 7 pm. Bring along a clipboard, a navigator, a flashlight, and a watch with a second hand. A small entry fee will be charged. These are not speed events, involving only about 2½ hours of driving over 50-80 miles, and will merely test your ability to follow instructions. For more info on any of these activities, contact Rick Tibbs, 978-1564, or Barry Nash, 377-9529, or write RMSC, 1217 Quebec, Denver, CO 80220.

MILWAUKEE SAAB CLUB--convoyed to Elkhart Lake for the June Sprints on the 14th. We enjoyed a day of excellent race competition, roasted in 90+ temperatures and compared notes and machinery with other Saab owners.

SAAB-Scania of America deserves a sincere thank you for the hospitality tent set up by Arsey Miller and associates at the races. In addition to welcome shade, they provided cold beer and a chance to admire two new 900s without a sales pitch. Arsey plans to set up in the same area next year, at corner 5 (a general-admission area).

Our next meeting is at 7:30 pm, July 27 at Shakey's Pizza, Hwy 100 at Silver Spring Drive. We urge all local Saab owners to attend. We will plan future activities, discuss tech' problems and enjoy free beer.

NEW ENGLAND SONETT CLUB--will have their next formal meeting at the Lime Rock Races on Labor Day weekend. Jack Lawrence will be racing his F Production Sonett, and since there is no racing on Sunday, he will show the club his cars in the paddock, and be guest speaker. There is camping available nearby, as well as motels. For more info, contact M.S. Raphael, 3 Sequoia Ave., RFD 10, Manchester, NH 03103.

TIPS FOR EARLY 99s FROM BRIAN DAHLIN, MINN

In 1970 my wife and I purchased our 1970 99 in Malmo, Sweden. 150,000 miles and 10 Minnesota winters later, it still lives. As a hobby I have been picking up older 99s (with one axle in the grave) and wrenching them back to life. The following observations, comments, and questions may be of interest to fellow SAAB nuts.

**When unable to get sufficient travel at the clutch slave with cars having a rubber section in the clutch hydraulic line you can make the following test. Wrap your hand around the rubber section while an assistant depresses the clutch. If the hose expands in your hand, replace it or fabricate a new section from copper tubing. I put a loop in the copper line to reduce bending fatigue caused by the power plant's movement on its rubber mounts.

**On the 1.7 l. engine I retorque the head once a year, about 10 ft.lbs. over spec. I am hoping this will cure the premature head gasket failures.

??Has anyone tried pressing bronze bushings into the intermediate gear cluster of the tranny, thus dispensing with all those loose needles that do not hold up anyway?

**Newer gearboxes can be fitted to the 1.7 l. engine, but it is sometimes necessary to effectively shorten the drive shafts by removing the outboard snap ring which locates the tri-joining of the inner universal. The tri-joining will then move onto the drive shaft approx. 3/16" where it stops at the end of the splined section. This will eliminate the vibration (three per tire revolution) observed on hard cornering.

**Never use radiator stop leak products.

**WATER INJECTION: I installed a Spearco Water injection which effectively eliminates predetonation while using regular gas in the carbureted 1.7 engine. DO NOT install the nozzle in the intake manifold as the manifold vacuum will suck the reservoir dry in about five miles. I silver soldered a piece of copper tubing through the air cleaner cover and extended it so that it shoots a stream of water directly into the carb. I use a .020" nozzle on the end of this tube. Other nozzled installations are possible, just make sure nothing can break loose and get sucked into the engine.

A filter should be used to eliminate plugging of the tiny nozzle. At temperatures as high as 35-40° F I found it is necessary to use some methanol to prevent icing of the carburetor butterfly. Such icing prevents the throttle from closing completely and one morning I had to control my speed by turning the ignition off and on. Premium fuel is more convenient than water injection, if you can get it.

**Electrical problems? Clean fuses first.

**Replace valve springs at major overhaul.

**Timing chain tensioner and guide plate life may be extended by polishing the outside of the chain loop with fine abrasive paper and buffing (clean chain thoroughly to remove abrasive). The idea is to give a new chain the smoothness and polish that it gets after 100,000 miles of chewing through a tensioner and guide plate.

??I am interested in fitting a VW Diesel to a 99 transmission. This should be an adequate power plant for an early (lighter) 99. I welcome any ideas concerning this conversion.

Brian Dahlin, Ely, MN

MILE-HI BODY SHOP RESCUES ANOTHER SAABER

I enjoy reading the newsletter and being a first-time car owner and Saab owner at the same time, it is a wonderful way to overcome my fears and ignorance about automobiles. I am convinced that this is the car to own, not just for the quality of the car, which has never left me in any doubt, but your great club, which gives one the sense of "community" thousands of miles away from home. I was in Denver over the New Year's holidays and found that my brakes were going. Fortunately I had a copy of one of the old newsletters which mentioned the name of a Saab shop there, Mile-Hi Body Shop. I called them, mentioned my problem, that I was from Chicago, the Saab Club, etc. They were extremely helpful, changed my brake pads while I waited and for a very reasonable price, and were all around good people. I would never have made it back to Chicago on schedule had it not been for them and the newsletter. My sister in Denver is terribly jealous; she owns a Peugeot (and a lemon at that) and cannot find a reliable service shop.

Suzanne Arata, Chicago, IL

Ed. Note: This is about the third or fourth letter I have received complimenting Mile-Hi Body Shop on helping some out-of-town Saaber in distress, by going out of their way, opening up on the weekend, etc.

96 REAR MUFFLER HANGERS--I just had to replace the rear muffler hangers on my '68 96 V-4. The parts dept. at Performance Cars calls the hangers "smileys." When I installed the new smileys, I also put hose clamps around them. This should, theoretically, take some of the strain off the smileys and hold the muffler up even if they fail again.

Andy Buc, Seattle, WA



CENTRAL ILLIANA SAAB CLUB--11 members attended the June meeting. Dean Katsaros and Randy Riggs explained the workings of the injector system, alternator repairs and problem solving, importance of checking relays for corrosion, problems in "warm starts," and answered current problems of member's cars. The July meeting will be held at Ray Heimberger's, 504 E. Walnut, Tolono, IL. Directions will be in the July 19 meeting letter. The August 23 meeting will be a drive-out to the Sportsmen's club in Mahomet for a picnic meeting. Details in the August issue of the Newsletter.

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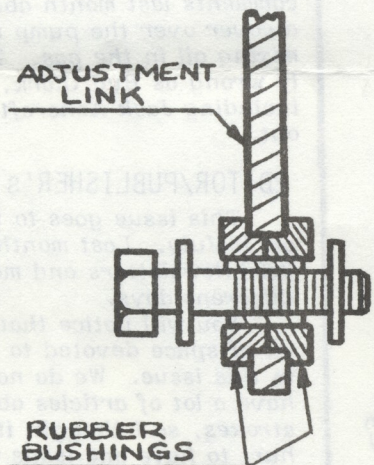
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MODIFICATION OF ALTERNATOR V-BELT DRIVE-- SERVICE CAMPAIGN NO. 501--Applies to All M81 900s with "H" engine below VIN's ending in -B1016- 745 (early March, 1981 production).

Improvements have been made to the alternator V-belt drive of the M81 "H" engine which should be retrofitted to cars produced early in the model year. The replacement alternator drive pulley (8577678) is 10mm larger in diameter than the original pulley and provides more working area for the belt thus reducing the possibility of slippage and premature belt wear. The adjusting link bushings (9354317) are of a harder rubber and will aid in holding an accurate belt adjustment. The drive belt 8384927 to be used is the original M80 belt which provides correct adjustment range with the larger pulley on the M81 engine.

PROCEDURE:

1. Remove the AC and power steering belts.
2. Loosen the alternator pulley retaining nut--do not remove.
3. Remove the alternator adjusting link (be careful not to drop the washer and bushings. Also note the order in which they were assembled).
4. Remove the alternator drive belt.
5. Remove retaining nut, lockwasher and pulley from alternator shaft (note pulley orientation and install replacement the same way).
6. Install replacement pulley (8577678), nut and lockwasher (do not torque at this time).
7. Install new bushings (9354317) in adjustment link



and mount link to engine and alternator.

8. Install new alternator belt (8384927) and adjust to 70 lbs tension. Tighten bushing end of link to block. (torque to 14 ft. lbs).

9. Tighten pulley nut to 23-29 ft. lbs.

10. Reinstall power steering and AC drive belts.

NOTE: Check belt tension after 1000 miles.

Thanks to Mr. Daniel L. David, Manager, Technical Services Department, and Mr. Robert Sinclair, President, SAAB-Scania of America for making Service Bulletins available to the Saab Club.

FOR SALE: 1969 Sonett, sand yellow, very good cond., rust repaired, alloy wheels, 90,000 miles: \$3000; 1969 Sonett, new blue, good repaired rear end collision, Konis: \$2500 Both cars have very good interiors forward, bad mouse-fur rear. Also 75% restored 93F, virtually rust free: \$1000. Robert Allen, 3035 NW 6 St., Gainesville, FL 32601, 904-376-1228.

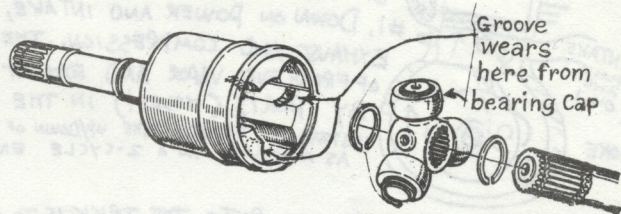
INNER U-JOINT WEAR CAUSES VIBRATIONS

There have been several calls about how to cure the vibration caused by worn inner U-joints after Charles Coe mentioned switching inner drivers in the June NL (p. 4). Apparently the needed fix wasn't made clear enough, so here is a drawing of what goes wrong. This is an illustration of a 99 inner U-joint, but the principle is the same for a 96 except there are only two bearing caps, instead of three.

What happens is a groove gets worn in the cast part of the inner driver after many thousand miles of wear by the bearing caps. The solution is to switch the left inner driver to the right side and the right side to the left, thus bringing new surfaces for the bearing caps to wear on. This is also a good time to check the bearing caps themselves and replace them if they are worn or look "bronzed" from over heating.

By the way, this "vibration" shows up only under acceleration and should not be mistaken for bad front end alignment, unbalanced tires, etc.

Jeff Delahorne, editor



CIS LAMBA OXYGEN SENSOR--QUICK & EASY TEST

Performance of the "computer" system entire, can be approximately verified by removing the lead to the O₂ sensor and grounding it while the engine is running. The engine should run roughly (use accelerator to keep running if necessary) for one minute or so, then smooth out. This restoration of proper mixture (albeit higher emissions) indicates that the loop has successfully closed--the computer has recalibrated for a null, as if for a new sensor. Failure to correct for the short implies that at least something is wrong with the electronic box--probably not with ancillary devices.

Ashton Brown, Kensington, CA

COOLING FAN FIX AND A/C IDLER PROBLEM

I had a problem with the cooling fan on my 99--it kept blowing fuses. It turned out that the problem was one of the two long screws which hold the back cover in place had come loose and was touching the armature, causing a short and blowing the fuse. One hour after starting, it was totally repaired.


Another problem which I discovered might be of value to fellow readers. In my '78 99 EMS, with air conditioning, the fan belt tension idler attachment points (to the head and the compressor) were constantly shearing bolts or stripping the compressor. This was finally determined to be caused by two missing bolts, the ones which hold the compressor mounting bracket to the block. Since they were out the compressor was free to move independently of the engine, with the fan belt tension idler attempting to hold them together. Thanks for a great publication.

Bob Friedman, Bridgewater, NJ

SVEN'S 2 STROKE TIPS

Tuck Boy

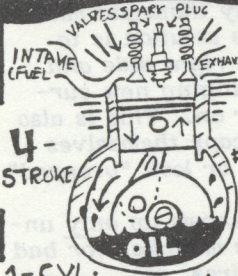
SAABS PLANES: SAAB J21A



1947: PISTON ENGINE FIGHTER, WAS CONVERTED TO SWEDEN'S FIRST JET BY INSTALLATION OF GLOSTER TURBOJET ENGINE.

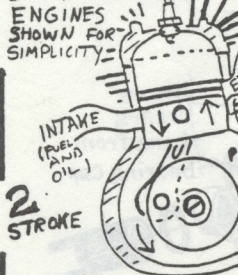
BASIC 2 STROKE PRINCIPLES & THEORY

4-STROKE



1-CYL. ENGINES SHOWN FOR SIMPLICITY

2-STROKE



HOW IS A 2-STROKE DIFFERENT FROM A 4 STROKE??

A 4 STROKE MUST MAKE 2 COMPLETE REVOLUTIONS OF THE CRANK - 4 "STROKES" - #1: DOWN FOR INTAKE, #2: UP FOR COMPRESSION (OF THE FUEL JUST TAKEN IN - IT FIRES AND #3 BLOWS THE PISTON DOWN ON THE POWER STROKE - #4 INERTIA OF THE FLYWHEEL BRINGS IT BACK UP ON THE EXHAUST STROKE. WHEN THE PISTON GOES BACK DOWN, IT WILL AGAIN BE ON #1, AN INTAKE STROKE, AN SO ON AND SO ON, PUTT - PUTT - PUTT.

A 2-STROKE MUST MAKE ONLY ONE TURN OF THE CRANK TO COMPLETE THE CYCLE - #1. DOWN ON POWER AND INTAKE, #2, UP ON EXHAUST AND COMPRESSION. THE IN/OUT FLOW OF FRESH FUEL VAPOR AND EXHAUST IS CONTROLLED BY PORTS (HOLES!) IN THE CYLINDER WALLS INSTEAD OF VALVES. (THE UP/DOWN OF THE PISTON ACTS AS A VALVE IN A 2-CYCLE ENGINE.)

AT THE BEHEST OF OUR PUBLISHER, "SVEN TELLS ALL!!"

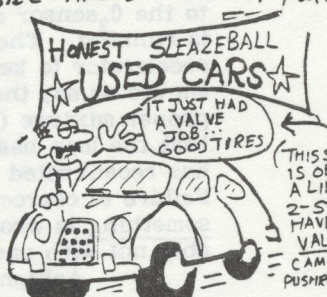
IT LOOKS SIMPLE, AND IT IS - BUT - THE TRICK IS TO GET THE EXHAUST TO GO OUT AT THE SAME TIME THE NEW FUEL IS COMING IN - THIS IS CALLED "SCAVENGING" - AND IT MAKES MANY ASPECTS OF 2-STROKE TUNING MORE CRITICAL - I.E. PLUG HEAT, EXHAUST BACK PRESSURE, SIZE AND LOCATION OF PORTS, ETC.

1. ADVANTAGES OF 2-STROKE

- SIMPLE - EASY TO FIX - LIGHT.
- CHEAP - HIGH HP TO C.I.D. RATIO.
- STARTS GOOD IN COLD WEATHER

2. DISADVANTAGES OF 2 STROKE.

- SMOKES - POOR FUEL ECONOMY.
- USES LOTS OF OIL - PRONE TO SELF-DESTRUCT (VIA DETONATION.)
- WON'T PASS "CLEAN AIR" STANDARDS
- ENGINE IS TOTALLY RELIANT ON OIL-IN-FUEL FOR LUBRICATION.



THIS STATEMENT IS OBVIOUSLY A LIE, SINCE 2-STROKES HAVE NO VALVES!! (OR CAMS, LIFTERS, PUSHRODS, ETC.)

CHANGE FROM OIL-INJECTED TO OIL IN GAS NOT RECOMMENDED

In response to the question in the June '81 Newsletter asking about the possibility of eliminating the oil pump on an oil injected two-stroke: I would not recommend it, as the main bearings have a plate next to them which guides the oil through them and a slinger which feeds the rod bearings under centrifugal force. The problem is this: the plate is right against the bearing; there is no way that oil and gas mixture is going to lubricate the main bearings. The reason the main bearings last longer in an oil-injected engine is the oil is not diluted with gasoline. You get better lubrication with less than half the oil. The main bearings are the only bearings which would suffer from the loss of the pump, but that's enough.

The oil-injected two-stroke engine is a fine piece of machinery. I have two Sonett II's and a Quantum III, all with oil injection--the only way to go with a two stroke.

Bud Clark, Torrance, CA

Ed. Note: I stand corrected in my comments last month about bolting a cover over the pump mounting and mixing oil in the gas. This is clearly wrong as Bud Clark, and others, including Jack Ashcraft, pointed out.

EDITOR/PUBLISHER'S REPORT

This issue goes to the printer on 10 July. Last month we printed 2909 Newsletters and mailed on two different days.

You will notice that there is a lot of space devoted to two-strokes in this issue. We do not usually have a lot of articles about two-strokes, so I thought it would not hurt to have one issue with a lot of articles on these great old beasts.

We will print up extra copies of the center four-page spread to use in the future as a tech' sheet. For those of you with 99s and 900s, not to worry. Every month is not like this and the Newsletter will have plenty of good tips in the future as long as people keep writing in. I now have a pretty big backlog of tech' tips, so if you have written me and have not seen your tips in print, please be patient.

In the notice concerning the Haynes manuals the Club has for sale, I incorrectly stated that the 99 manual covers 1969-76. It covers 1969-79 since there is a supplement in the back that covers the differences in the '77-79 models from the earlier years. The price for the Haynes manuals should also be \$10.50 instead of \$10; I underestimated the price of postage.

My thanks to Dick Grossman for doing some quick illustrations, and to Jack Ashcraft for another wonderful article.

Jeff Delahorne, editor

900 PAINT REPAIR AND SIDE MOLDING INFO

I have six pages of SAAB-Scania Service Information that is too lengthy to print in the Newsletter but which I can copy for those who are interested. I think it will be primarily of interest to body shops and others who do their own body work. The subjects are: 1. Repairing The New SAAB "Dual Coat" Metallic Paints, Mid-81 and later 900s, 2. Sherwin-Williams Paint Codes for M81 SAAB Colors, 3. Removing and Installing Body Side Mouldings, Glue On Type, 1981 and earlier. Please specify which ones you would like and enclose a long SASE.

Jeff Delahorne, editor

RECOMMENDED MECHANIC: Gary Price, Small Car Co., 2110 E. 2nd Ave., Flagstaff, AZ 86001.

RECOMMENDED DEALER: Goettal Motors, 705 E. Roosevelt Rd., West Chicago, IL., 312-293-1970.

SAAB CLUB
JUL '81
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Different Strokes...

by Jack Ashcraft



Two cycle automobiles in general, and Saabs in particular, are a strange breed. They require some care you wouldn't even consider for a four cycle engine, and in their relative simplicity (no valves, camshaft, etc) require no maintenance in other areas. Those areas that DO require attention, however, are critical, not only for proper running and decent economy, but for the actual survival of the engine itself. These areas are the ignition (parts and adjustments), carburetion, and exhaust system.

A well tuned two-cycle engine is a delightful piece of machinery, and with its inherent smoothness, its easy to forget about regular maintenance until the engine begins to miss, or suddenly loses power, or begins to make odd (and expensive) noises. The fact of the matter is that the road to happiness with a two cycle engine is VERY regular maintenance, even to the point of "fiddling with it" a lot.

Two stroke engines tend to eat up spark plugs at an alarming rate, and the higher tuned the engine the greater appetite for expensive plugs. I have known a number of people who tired of the constant replacement and installed a CD ignition "...so those plugs would last longer and fire better in oil..." and then lamented at great length when their engine holed a piston! Some perspective is in order here. First, the Bosche ignition, when kept in proper condition and adjusted correctly, can hardly be improved on. Secondly, the engines we are dealing with here have a very high specific horsepower output per cubic inch, particularly the Sport (red) engines in the GT750, GT850, MC850, Sonett, and Special sedans and wagons-- something like 1.3 horsepower per cubic inch! If you think the Sonett engine is finicky at 70 bhp from 51 cubic inches, you should experience a four cycle engine that produces similar power outputs! Very few four cycle engines can match this figure and those that do are very expensive, very temperamental racing engines that eat spark plugs even faster than the Saab! So it is best to keep in mind just what sort of an engine we're dealing with here, a very small engine thats doing a pretty big job. Now lets get down to the nitty and the gritty of the care and feeding of two cycle Saab engines.

I mentioned that ignition is a critical area for these little engines. If your timing gets more

than a couple of degrees off you will experience a loss in power and in fuel mileage. If it gets a few more degrees off, particularly in the advance direction, you stand a very good chance of cooking a piston, usually the center one (#2).

Before you attempt to set your timing, check your ignition points. If they are pitted, replace them. If they are OK, set the gap at roughly .016" and then check the dwell with the engine idling and adjust the points to obtain the proper dwell setting for your engine. Dwell varies slightly for different distributors so you'll have to check the plate on yours to see what number it is.

Model	Distributor	Dwell
Std 95 & 96	VJ3 BR8T	77° - 83°
	VJU3 BR1T	77° - 83°
	VJU3 BR2T	77° - 83°
Saab 750GT	VJ3 BR7T	80° - 84°
Saab 850GT	VJ3 BR9T	80° - 84°
Saab MC850	JFU3 0-231-144-004	75° - 82°
Saab Sonett	JF3(R)	75° - 82°
Saab Sport 1965-	VJ3 BR11T	75° - 82°

Remember--keep the plugs and points gapped properly. When the points close down as the phenolic rubbing block wears, dwell increases and timing is retarded! As plugs wear and their gap increases, timing is further retarded! Performance deteriorates, fuel mileage is poor, and you can damage a piston if this goes on too long. Keep 'em adjusted!

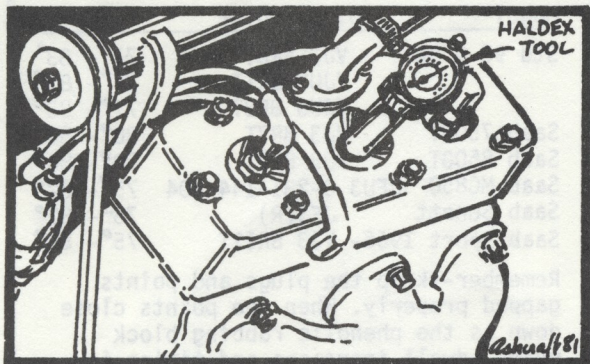
Now that we have the distributor points sorted out, and set properly, put on some lubricant to keep the rubbing block on the points from wearing rapidly. Bosche makes a cam lubricant especially for that purpose and I recommend it highly. Ask your local purveyor of Bosche parts to order you a tube of it. Bosche Part Number 5 700 002 005. Its the best.

Next, check the operation of the vacuum advance mechanism if your car has one. Pull off the vacuum hose that goes to the carburetor(s), wipe the end with a clean cloth, and suck on it good and

Different Strokes, contd

hard while you watch the advance plate under the points in the distributor. You should see the plate move in the direction of the vacuum advance unit something like a quarter of an inch. If it does not move despite your turning blue from sucking on the hose, the advance unit must be replaced or you can damage the engine because of its non-operation. If it works, or if your engine only uses mechanical advance, you can move on to the job of timing the engine.

Timing the two cycle Saab engine is a little different than the usual method of whipping out the strobe light and pointing it at the timing marks and turning the distributor until they line up. That works on the Saab, too, but some initial checks need to be made first, since its possible that your marks may not be in the right place. The center cylinder is the timing cylinder and you need to get it to top dead center (TDC), so pull out the #2 spark plug and rotate the engine so you can see the piston close to the spark plug hole. Now you need a dial indicator, either a standard mechanics unit that you set on the cylinder head with a short probe inserted into the hole contacting the piston head, or the special Haldex-Starett Saab tool that merely screws into the spark plug hole. You carefully and slowly rotate the engine back and forth until you get the highest reading on the dial indicator, then stop. THAT is TDC for your #2 cylinder. NOW look at the timing marks and see if they line up with the mark on the front pulley of the crankshaft.



If they line up, you can proceed to time the engine. If they don't line up, you will have to file in a new mark on the crankshaft pulley. I have seen quite a few engines that this was necessary on. Once you determine for sure that the marks line up when the engine is at TDC on the dial indicator, you don't have to check that again. The advantage of the special Haldex Saab tool is that it reads in degrees and you can set your timing by rotating the engine to the specified timing setting by reading it directly off the gauge on the tool! For the rest of the world, use the timing marks on the engine block.

I mentioned that the timing marks might not line up when you got the engine to TDC on #2 cylinder. On Sport (red) engines, there is a safety clutch

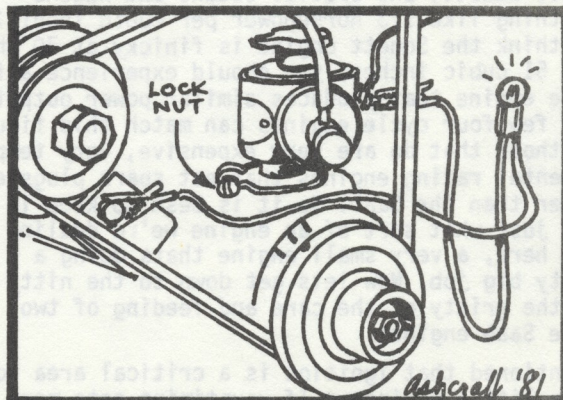
car	static	timing setting
750 Standard		8° BTDC
750GT		0°
850 Standard engines		
with vacuum advance		7° BTDC
850 Standard engines		
without vac advance		10° BTDC
850 Sport (red) engines		
(all)		10° BTDC

You may have an engine with three marks or one with one mark on the block (for TDC) and a peen mark an inch or so to the left of it. If the latter is the case, you must use a Haldex tool or a strobe timing light to set the timing. When using the strobe light, run the engine at 3000rpm to set the timing.

arrangement in the front cavity of the block that would allow the crankshaft to turn when the grease in the cavity was too stiff to allow the gears to turn, without breaking anything. Cold climate owners may have experienced this. The cure is to remove the pulley and realign the spring loaded pins into their respective drive holes and reassemble the pulley, torquing the nut to 36 ft lbs. (See the shop manual for details-- I'm mentioning it here because it can be a real mind bender if you don't know that this can happen).

If you set the timing with a strobe light, do it with a warm engine, and run it at 3000 rpm while you carefully rotate the distributor until the timing marks line up. The third mark on a three mark engine is the one for strobe timing, just as the peen mark on a one mark engine is used for timing with the strobe light.

If you set the timing with a test lamp (see below) rotate the engine 30 or 40 degrees CCW as viewed from the front and slowly turn it CW until the notch on the pulley coincides with the second mark on the block. Now rotate the distributor until the test lamp just lights. Tighten the lock down nut on the distributor base. Now repeat the process until its right. The light should go on just as the notch and the middle mark on the engine block coincide. Use care and have some patience because this adjustment is very important to the long, happy life of your engine!



Different Strokes, contd

There is no satisfactory way to clean out the exhaust system, so it must be periodically replaced. The factory recommendations should be followed:

Item	Replace at
Rear Muffler	Every 18,000 miles
Front Muffler	Every 36,000 miles
Tail pipe(s)	Every 36,000 miles

Spark plugs of the correct heat range are as critical as the proper timing, for a two cycle engine. Many people have tried to "improve" on the factory recommendations for plugs, using odd brands or "fire injectors" and almost always these experimentations end in sorrow and expense. Don't forget that you are dealing with a very highly tuned engine and it needs EXACTLY the right spark plug, not one that seems to be the right interchange, based on some parts counter weenie's spark plug listing. Here are the only plugs I would consider putting in a two cycle Saab:

car	Bosche	Champion	NGK
750 Standard	M225T1	UK-10	A-7
750GT	M240T1		
95,95 Std thru 1964	M225T1	UK-10	A-7
95,96 Std 1965-67	M225T1	K-9	A-7
1968 820cc	M225T1	K-9	A-7
Sport engines (red--all)	MGV260T31S	--	A-8

Replacements are still available through Beck-Arnley stores as well as from Saab, except for the Sonett and the Sport (red) engined cars. For these cars, which have two tail pipes, you can buy the front and rear mufflers from Saab and have a muffler shop weld in the tail pipes, since there isn't anything trick about them. In fact, there isn't anything trick about the rear muffler, either, except that the high tuned sport engines are LOUD and the Saab muffler is especially effective in reducing noise. At any rate, the replacement intervals are critical and when they are not replaced, you can count on burning out the #3 piston. (front). You figure out which is the cheaper way to go.

For your information, the 1968 engines of 820cc displacement was essentially the same as the 1967 standard engine with the bore size reduced to reduce the engine size to less than 50 cubic inches and avoid meeting the new USA smog requirements, a ploy that Fiat made with the 850 series they were marketing in this country at that time. On the Saab, you can tell if your engine is an 820cc by checking the serial number on the engine block. If it has an "E" prefix, its an 820, if it does not, its an 850.

The air cleaner and air filter(s) are the other end of the tuned system and require maintenance and filter replacement on an as required basis. Take out the filter element and put your trouble light inside the filter. Look at it from the outside. If over 50% of the filter seems to be plugged, replace it. Wipe out the inside of the air cleaner and be sure its securely tightened when you put it all back together and mount it on the carburetor(s).

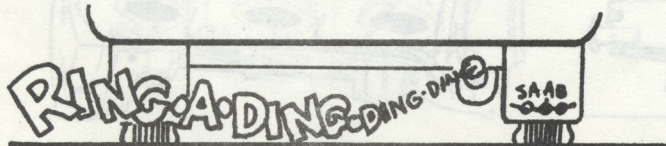
A lot of two cycle engines have been destroyed by bad exhaust systems. Sounds like a fairy tale, right? Wrong. To understand what happens lets examine how a two cycle engine works for a minute. Remember that they fire on every stroke of the engine--every time the piston comes to the top of its stroke. So part of the time both the intake (transfer) ports and exhaust ports are open together. The intake system, from air cleaner to port, and the exhaust system, from port to the end of the tail pipe, are tuned systems designed to get fuel and air into the cylinder and get the burned gases out of the cylinder in the most efficient manner possible. This sonic tuning depends on expansion chambers above the cylinder (air cleaner) and below it (front muffler) to work properly. When the exhaust system begins to fill up with deposits produced when you burn oil with the gas, this sonic scavenging of the burned gasses is sharply reduced, and performance and mileage deteriorate.

Speaking of carburetors, these should be removed from the car, disassembled, boiled out with carburetor cleaner, and reassembled with new gaskets every 18,000 miles. I scheduled this operation on my cars when I changed the exhaust system parts. You simply cannot allow a two cycle engine to run too lean or you burn out a piston. So keep the carburetor(s) clean and adjusted properly and you won't have to worry about that problem.



If you are considering the purchase of a Saab with a two cycle engine, here are some things you can check on the car before you plunk down your bread on the car and then have it blow up on the drive home.

Listen to it run. Is it smooth and quiet through the RPM range? There should be no knocks or strange noises except the characteristic .."Ring-a-ding-ding-ding..." when the engine is blipped and then returns to idle. If it has any knocks or thumps, lookout! Now, pull the spark plugs and look at the electrodes on them. If an engine has been pinging or running too lean for very long, there may be aluminum on the electrodes, meaning metal is being transferred off the piston crowns onto the plugs and you will very soon have a neat hole in the top of that piston! Look down into the plug hole with a flashlight. The piston



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Different Strokes, contd

crown should be smooth and may have a slight carbon buildup. What you're looking for is raw aluminum that may have been transferred to the spark plug before the current set was put in.

Tap on the front muffler. Does it sound like a cement culvert? Or does it ring like an empty tin cylinder (which is what it is)? If its the former, you will have to change the system very soon--a goodly expense.

Excess oil on any spark plug may spell a bad plug wire or it may mean there is a ton of miles on the engine and the rings are gone. Take a compression test. The standard engines should be 128 psi + 5 psi. On 1965 and later engines, the volume of the center (#2) cylinder was increased to reduce compression and reduce ping, so you may find that one reading 10 psi less than the other two. If so, thats normal. Curiously enough, the compression of the sport engines is the same even though the effective ratio is higher. This is due to port overlap (the time when the transfer and exhaust ports are open at the same time) being greater on the sport engines. I really should say this is when the ports are uncovered by the piston. The ports are larger and located slightly differently on the red engines than on the standard ones. Use care and take your time when you check out a Sport engined car. These need a lot of care and maintenance--more than the standard car--and they may not have gotten that care from the previous owner.

The rest of the car is essentially the same as the V4 cars, so you can look that over in much the same manner as you would if you were considering a V4 for purchase.

Gasoline is a item to mention briefly here. The standard engined two cycle cars can use either leaded or unleaded regular gas, UNLESS they ping on the gas you are trying. Ping cannot, under ANY circumstance, be tolerated! The Sport engined car needs premium fuel. Unleaded premium is fine as long as the car doesn't ping on it. There are no valve seats or guides to be damaged. Indeed the engine will probably not build up as much crud in the exhaust system when you use unleaded fuel so you should at least give it a try, but do keep a keen ear open for any sign of pinging!

Oil for the two cycle engine is probably the subject of more theories than how to make a VW go

faster, but the bottom line is pretty simple. When Saab Hi-M was still available it was the best thing to use. It is now unavailable so the best thing to use is a good brand of two cycle bike oil such as Torco, is the way to go. Two cycle oil is ash-free, and won't foul plugs the way regular oil does and it won't fill up the exhaust system as quickly either. In a pinch you can put in regular high detergent motor oil but the two cycle oil is best.

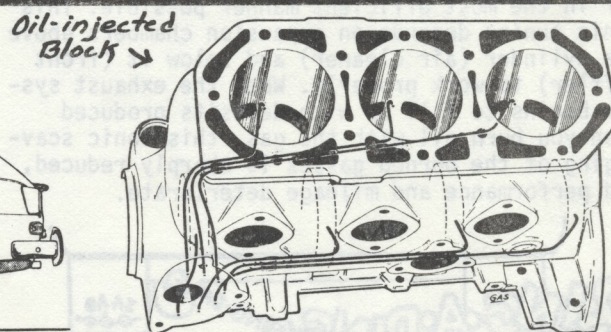
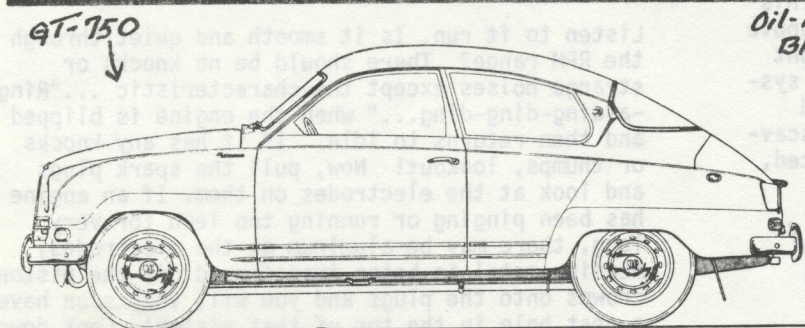
If you have a sport engine with the external oil tank (or standard oil injection engine, for that matter), you cannot add oil to the fuel tank and expect to lubricate the crankshaft. When Saab built the injection engine, they added seals to the crankshaft assembly that don't allow the fuel and oil mix to get to the main bearings as it did with the old engines. The injection pump must operate or you will ruin the crankshaft!

The cooling system needs special attention on two cycle Saabs for two important reasons. 1) It is a relatively small system and it must operate near maximum efficiency to keep the engine from overheating. 2) Coolant with the proper amount of year-round antifreeze in it (50-50 mix) will prevent erosion of the aluminum cylinder head, and on later models, the water pump housing. Keep anti-freeze in the car year-round with a 50-50 mix with water, and drain and flush the system once a year. Remove the radiator and have it cleaned and repaired (whether its leaking or not) by a good radiator shop every other year.

If you have an early car and wish to change the external thermostats for summer and winter use, the black thermostat is 75 C and the green unit is 85 C.

Finally, I must reiterate a point mentioned at the start as this helps to keep your point of view in the right area when dealing with your two cycle Saab: These are highly developed small engines doing a big job. The red engines in the Sport models puts out a terrific amount of horsepower per cubic inch. Treat them like the high tuned engines they are and you will be rewarded with good mileage and exceptional performance. Neglect them and you can be sure they will perform poorly and, ultimately, self-destruct. If you are not willing to give them the care they require, I would suggest you avoid the two cycle car entirely and consider a Saab V4. Or just maybe a Chevy Malibu.

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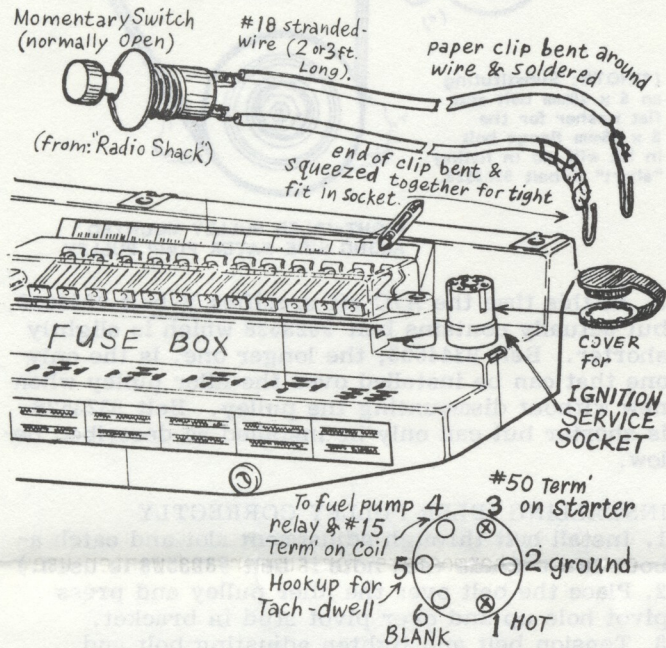


REMOTE STARTER SWITCH FOR 99s & MAYBE 900s

In the interest of making working on my Saab easier and cheaper, I have stumbled across a cheap remote starter. This set-up should work on all Saabs that have the "ignition service socket." Mine is a 1977 99GL.

I will be needing at least a partial exhaust system soon, and I was wondering if anyone has any good or bad experiences with "high performance" aftermarket exhaust systems.

Adrian Kocurek, Chicago, IL



To use, insert one paper clip into #1, and the other paper clip into #3. Make sure transmission is in neutral. With ignition off, engine will merely crank, which is great for checking compression. With ignition on, the engine will start.

MORE ON WATER INJECTION--1978 TURBO 99

I want to add a couple of caveats regarding water injection specifically with regard to 1978 Turbos. If you have a unit which is not regulated proportionately according to rpm, the on-off pressure activated switch should be set for 5 lbs. You should not need water injection below 5 lbs of boost. If you do, the gas you are using is too low in octane, you timing is incorrectly set, or something is internally wrong with your engine, such as incorrectly set valves.

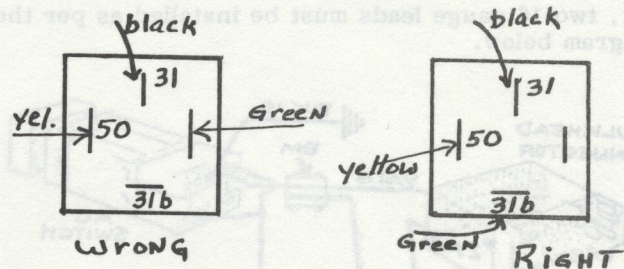
The spray orifice should be mounted as close to the turbo as practical so water does not pool in the intake. I've mentioned previously that the top of the water level in the reservoir must be below the level of the spray orifice; otherwise siphoning will occur. It is also important to use the minimum amount of water injection needed by your vehicle. Excess water injected can wash down the cylinder walls and contaminate the oil.

Ted Fitts, La Crescenta, CA

RECOMMENDED MECHANIC: Keenan Cars, Grand Rapids, MI.

900 WARM START REWIRING SOLVES PROBLEMS

Since warm starting has been one of the great annoyances with my '79 900 Turbo, I looked forward to blessed relief with the hot start kit (p/n 7873458, Oct. '80 NL, p. 4). Imagine my disappointment when I found no significant change. After several fruitless visits to my dealer, I took matters into my own hands and started tracing the leads to the hot start relay. I found the following wires: black--ground; yellow--12V from starter, via the thermo-time switch; green--from the cold start injector, to be grounded by the contacts of the relay. I found the relay wired as follows:



Obviously this was my problem, and rewiring the relay plug solved it. Incidentally, Porsches with CIS fuel injection have had fires and explosions in the air box due to too rich mixtures. For this reason I would be cautious in using a grounding switch to fire the cold start injector.

Mike Cahan, Warrington, PA

Ed. note: I have three pages of instructions on installing the warm start kit mentioned above which are too long to publish in the Newsletter, but I will mail a xerox copy of them on request. A SASE (long envelope) would be appreciated. The warm start kit is for '75-'80 CIS Saabs.

ADAPT SANKYO COMPRESSOR TO GM A/C UNITS?

Bob Hart of Florida called and would like to know if any club members have experience changing air conditioning compressors on '79 900s from the unreliable GM unit to the better Sankyo used on the '81s. If anyone has made this switch, please write the Saab Club.

LATE-LATE CLASSIFIED ADS....

FOR SALE: Parting out late '72 99, no transmission, very good body. John Abbs, R#1, Box 231, Baraboo, WI, 608-356-6871.

FOR SALE: Quartz halogen headlights, one pair, Hella 6"x7" to fit 900: \$49 Pete Kulesza, 103 Dogwood Lane, Tullahoma, TN 37388, 615-455-1499.

RECOMMENDED DEALER: Clews & Strawbridge, 310 Lancaster Pike, Frazer, PA 19355

VICTOR SAAB

1135 Easton Road - Abington, PA 19001

We'll ship any part - anywhere in the USA. We have one of the largest parts department on the East Coast. Complete stock of V4 parts and what is still available in 2 cycle parts. Call Dan Stella - (215) 886-8660.

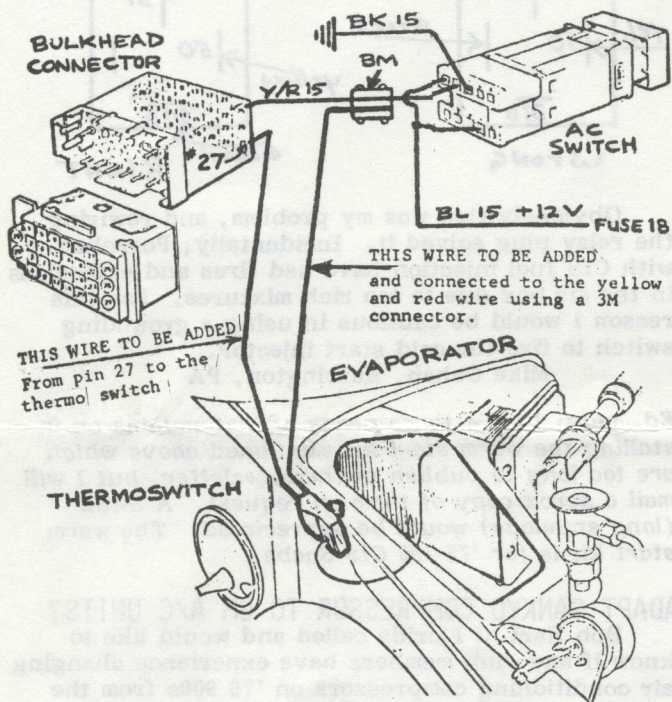
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Service Information

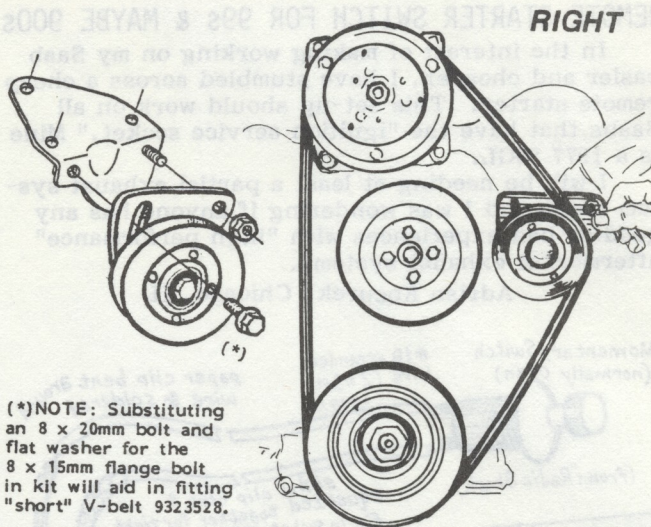
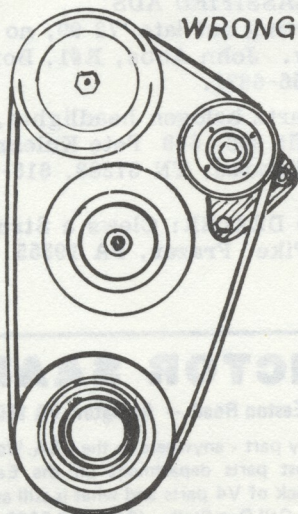
INSTALLATION TIPS--A/C KITS FOR '81 900s

The following should clarify several points in the installation of A/C kits in 1981 900 and 900s models.

1. Some baseline cars may not have the wiring for the A/C evaporator thermostats. Check the plus (+) lead for the radio wiring harness. There is a red band attached to the lead with a part number on it. If the number is preceded by the letter "C" the wires for the thermostats are in the car. If not, two 16 gauge leads must be installed as per the diagram below.



2. Installation of the idler pulley according to the instructions supplied in the kit results in incorrect positioning of the pulley relative to the length of the belt.



(*)NOTE: Substituting an 8 x 20mm bolt and flat washer for the 8 x 15mm flange bolt in kit will aid in fitting "short" V-belt 9323528.

RIGHT--IDLER PULLEY MOUNTED ALONG SIDE WATER PUMP PULLEY

3. At this time the A/C kit specifies V-belt 9344632, but actually contains belt 9323528 which is slightly shorter. Belt 9344623, the longer one, is the only one that can be installed over the idler pulley when new without dismounting the pulley. Belt 9323528 is shorter but can only be installed as described below.

INSTALLING IDLER PULLEY CORRECTLY

1. Install bolt through adjustment slot and catch about two threads (see note if belt 9323528 is used.)
2. Place the belt over the idler pulley and press pivot hole up and over pivot stud in bracket.
3. Tension belt and tighten adjusting bolt and shouldered nut on pivot stud.

LATE ARRIVING CLASSIFIED ADS....

FOR SALE: 1969 Sonett V-4; good cond., garaged; a little work can restore it to mint cond.; owned since 1974--third owner: \$2000 area. Phil Johns, 2620 5th Ave., Altoona, PA 16601, 814-946-0230.

FOR SALE: '73 99EMS dash with tach-clock: \$50; five EMS wheels: \$200 plus shipping; one new driver's side 99 A-frame: \$50; One set head rests: \$15; two rear Gabriel red-rider shocks, new: \$20; one rear bilstein shock: \$15. Brian Bradshaw, 102 Leach St., Salem, MA 01970, 617-745-5913.

FOR SALE: 1969 Sonett V-4, new blue paint, new radials, sunroof, new brakes: \$3500. Also one 96 and one Sonett trans., just rebuilt: \$500 each. Front nose from 3 cyl Sonett, floor pan for '68 Sonett, no rust. Also plexiglas rear windows fro '67-'69 Sonetts and for Sonett IIIs. Hank Latunski, 25612 Via Solis, San Juan Capistrano, CA 92675, 714-493-4066.

FOR SALE: '73 96, 71,000 miles, no rust, excellent condition: \$1750; Parting out '73 Sonett, one late model mag: \$50; alternator: \$50; rear bumper: \$50; A/C pump: \$35; steering wheel: \$35; doors: \$50 ea; w/w motor: \$35; wiring harness: \$75; Motor Sport 43mm carb/manifold: \$75; also parting out two 96s, and one Sonett III rear body section, make offer. I will pay freight on all of the above. Mike Tucker, 704-847-2282, 2324 Davis Drive, Matthews, NC 28105

CLASSIFIED AD RATES

Ads offering parts or Saabs for sale or wanted at prices under \$200 are FREE to members and non-members. 25-word limit, plus name and address. Ads listing prices of \$201 to \$900, enclose \$2. Ads listing prices \$901 to \$2000, enclose \$5. \$2001 and up, enclose \$10. All ads without a price listed, enclose \$10.

Commercial ads, \$10 per column inch, two inch maximum. We will delete all unnecessary superlatives and abbreviate where possible. Please enclose sufficient funds with ad copy, we will NOT bill.

FOR SALE: 1967 Sonett 3 cyl., serial #137, Gold with black/gray interior. Low miles on engine and trans.: \$3500. D.D. Benham, PO Box 497, Selma, NC 27576

FOR SALE: 1974 Sonett, Good condition, green, 80,000 miles: \$3800. Ben Bonkowski, 517-485-9515, after 5:30 pm, Lansing, MI.

FOR SALE: 1974 Sonett, hi-perf. carb, cam; free-flow single exhaust, rebuilt trans. & heads, new tan interior: \$3400. Kevin Greatens, 414-468-1737, after 4, Green Bay, WI.

FOR SALE: 1964 96 GT 850, missing exhaust. To restore or part out; excellent interior and dash. Garaged for past year: \$500 or best offer. C.A. Gaily, 2106 Grantland Ave., Nashville, TN 37204, 615-322-2929.

FOR SALE: 1965 96 Racer; great 850 Sport injector engine, roll cage, strengthened body; ready for rally or ice, also street legal, many spares: \$700 or offer. Also 2 stroke engines for sale; 850 Sports, 3 blocks, 2 cranks, one good, one seized: \$200 plus shipping. Bill Cook, 616-784-5072, Grand Rapids, MI

FOR SALE: 1967 96 two-stroke with Vredestein radials, also '65 95 for parts and complete two-stroke engine with bad piston and misc. parts, all for \$600. Jerry J. Zach, 12321 N. 76th St., Mequon, WI 53092 414-242-5655.

FOR SALE: 1969 96 with extra V-4, plus parts from '68 Deluxe, door, side panels, seats, dash, etc: \$400 for all. Roger Freeberg, RD#1, Huntingdon, PA 16652, 814-627-2359

FOR SALE: 1972 95 Wagon, white with minor rust, but solid body, Pirelli P-3s, am-fm, recent shocks and rebuilt trans. w/ free-wheel only: \$1250 Mimi Demaree, Box 8, Chiopyle, PA 15470, call after July 27, 412-329-4017.

FOR SALE: Stainless steel muffler and tailpipe for 95/96 V-4, new condition with necessary clamps and hangers: \$50 or \$80 with very good headpipe included: Eric Davidson, 16000, Willow Rd. SE, Port Orchard, WA 98366, 206-857-2729.

FOR SALE: 1972 96 parts, very good engine: \$250; fenders: \$50; other misc. Larry Nelson, 114 W. Oak St., Kent, OH 44240, 216-932-9094.

FOR SALE: Air conditioning unit for late V-4 (long under-dash unit) good working order when removed \$90. Competition reground camshaft for V-4 engine complete with matching lifters, used only 3,000 miles, too hot for street use: \$75. John Poulton, 919-489-4069 before 9 pm EDT.

FOR SALE: V-4 web-case transmission complete with housing and throw-out bearing: \$225; radiator: \$30 starter: \$35; two Sonett wheels: \$70. Mark Anthony PO Box 115, Madrid, IA 50156, 515-795-3111.

FOR SALE: Factory service manual for 95/96/GT750 softbound, excellent condition: \$15 incl. postage. Peter Grendysa, 9708 Caddy Lane, Caledonia, WI 53108, 414-764-3676.

WANTED: Right rear lever-arm shock to fit '70 95; must be in excellent condition, will pay up to \$20. Scott Reece, 4702 Spring Brook, Rockford, IL 61111

WANTED: Two Sonett V-4 hood emblems, will pay \$5 each or ? Also interested in some interior panels. Kaj Bjorklof, 504 Lafayette Blvd, Oldsmar, FL 33557 813-530-2905 days or 813-855-1763 eve's.

WANTED: Driving lights for Sonett III cutouts in grille. C. Sweeley, 1417 Siskiyou Dr., Carson City, NV 89701, 702-883-0572.

WANTED: Late model Sonett mag wheels. Chris Mills 17-5360C2, 295 N. Maple Ave., Basking Ridge, NJ 07920, 201-221-6557.

WANTED: Late model 96 in good or better mechanical condition; prefer one close to Virginia. Brian Harris PO Box 85, Saltville, VA 24370, 703-496-4383.

FOR SALE: '79 900 Gi, brown with brown interior, 3 door, air, etc. 43,000 miles: \$6900. Darrell F. Huntley, 14603 E. Flomar, Whittier, CA 90603, 213-696-2870.

FOR SALE: '76 99 GLE brown with tan vinyl top, 46,000 miles, 4 door, AT/PS, A/C, Sanyo am/fm stereo 8 track, speed control, fogs: \$4500 or 1976 2 door white 99 GL 36,000, AT/PS, A/C, speed control, fogs: \$4000 Both cars always garaged. Warren F. Bland, 732 Jennings Ave., Vallejo, CA 94590, 707-644-3584.

FOR SALE: 99 EMS, 1975, fair condition: \$2000. Lowell Stephens, 404 W. Washington, Yorkville, IL 60560:

FOR SALE: 1971 99CA, 1.85L, 77,000+ miles, has broken outer U-joint, but is towable. Very little rust and has \$550 in engine overhaul, extra parts, tires & rims, workmanual: \$375. Curtis Adler, Scooby Hill Rd., Springville, NY 14141, 716-592-9286.

FOR SALE: '73 99 parting out, all body and engine parts available and in good condition. Also '72 Sonett parting out, everything but front bonnet. Mike Connolly, 2A Meriin Dr., Fairfield, OH 45014, 513-874-8120.

FOR SALE: Five good Semperit radials, 165SR15, mounted and spin balanced on rims with full wheel covers for 1976 99: \$100. Jerry J. Zach, 12321 N. 76th Str., Mequon, WI 53092, 414-242-5655.

FOR SALE: '71 1.85 rebuilt engine: \$650 or best offer. Also '71 99, complete body in very good condition. Any reasonable offer accepted. Bob Ware, 38 Tanglewood Drive, Dracut, MA 01826, 617-454-4167.

FOR SALE: Factory air conditioner for '73 or '74 99 very good condition: \$125 plus shipping, Nick Jensen, 919-286-3189, Durham, NC.

Please use knife/letter opener

JUL 1981

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5805 Oneida Street
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FOR SALE: 99 parts: 1970, '71, '74 bodies with good sheet metal and glass: \$100-\$300. 1.7, 2.0 l engines: \$150-\$350. Jeff Burkes, Rt 1, Box 294C, Pittsboro, NC 27312, 919-542-5730.

WANTED: Complete air conditioning system to fit 1977 99GL. Martin Krakowski, 102 Nelson St., Clifton, NJ 07013, 201-742-2562.

WANTED: Tachometer from 99 EMS. Donald Wigston, 4164 West Pine, St. Louis, MO 63108, 314-535-2118.

WANTED: Aluminum wheel covers from '76-78 99 GL, offer \$15 for one, \$20 for two, or trade 4 1/2 x 15 steel wheel for one. T. Chuhay, 8226 Ellsworth Ct., Merrillville, IN 46410, 219-392-2525, or 312-221-5800 days, 219-769-1741 eve.

WANTED: Original burnt orange seat covers to fit one or both front seats fo '74 99LE, in good condition. Also four good condition wheel covers. Clark R. Smith, 708 Dodge St., W. Lafayette, IN 47906, 317-743-5799.

WANTED: Driver's side headlamp trim for '73 99LE. Bill Nyhan, 7448 W. Barry, Chicago, IL 60635, 312-637-3153.

FOR SALE: Four chrome center hub caps for 1979/80 900 GLE and Turbo spoked wheels: \$8 each. Rich Bohn, 34 Alsun Dr., RFD#4, Milford, NH 03055, 603-465-2108.

WANTED: For '77-'79 GLE, front bumper: \$50 or ? Cis fuel injection hoses: \$10 each; four wheel opening mouldings: \$5 each; two front parking lamp assemblies: \$25 each. Jack Hinds, 114 Kingwood Dr., Chatta., TN 37412, 615-867-2466.

WANTED: Back copies of Saab Club Newsletter, 1979 all exc. March ; send asking price. J. Maymon, 251 Summit Ridge Dr., Nashville, TN 37215.

WANTED: Complete air conditioning unit for 1978 Turbo 99, \$300-\$400. May consider higher price for new unit. Ted Fitts, 3634 Burritt Way, LaCrescenta CA 91214, 213-957-2197.

WANTED: Trailer hitch and instrumentation cluster to fit 900 Turbo. Pete Kulesza, 103 Dogwood Lane, Tullahoma, TN 37388, 615-455-1499.

WANTED: for 1973 99LE, 2.0 l, automatic transmission, left front drive shafts, left fron complete rotor and complete left front suspension. Also, FOR SALE or trade: '71 99E, car has wrecked front end, otherwise in good mechanical condition; car stored in Kentucky: \$500 or trade for 96. Brian Harris, PO Box 85, Saltville, VA 24370, 703-496-4383.