



HOT AIR

NEWSLETTER

DECEMBER 2007

the aftermarket airconditioning and auto electrical specialists of choice

National Secretariat: PO Box 1160 Paradise Point Qld 4216 ACN 063969782

Draft auto Code of Practice released for final technical review

VASA members welcome to read and comment

The Australian Government's Department of the Environment and Water Resources has released its final draft of the Code of Practice for the automotive industry, and is inviting those involved in the industry to read it and submit any final suggestions of a technical nature before adoption.

The draft Code covers the control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners. It does not address the use of hydrocarbons in MVAC.

VASA, with the assistance of a number of companies, associations and individuals, played a key role in the development of the Code.

The Code is based largely on material and ideas prepared by the Motor Trades Association of Australia and VASA.

The Ford Motor Company provided technical advice and guidance in the preparation of the final text.

The Department of the Environment and Water Resources has acknowledged the role played by these and many other organisations in preparing the Code.

VASA members are invited to read the Code and channel any comment on technical matters through VASA President Mark Padwick.

The draft Code can be downloaded as a PDF from the Australian Refrigeration Council website. The address is:
www.arctick.org/news/pdf/Automotive_COP_draft.pdf

If any member wishes to make a technical comment on the draft Code, this comment must be in writing, and must be lodged by email or fax to:
mpadwick@sanden.com.au
or Fax: 02 9791 9029
by 5pm on Thursday 20 December 2007

The VASA president will then lodge one submission to the Department, by its closing date of 24 December.

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: **Once the Code of Practice** :
: **is finally approved, Hot** :
: **Air will serialise it over** :
: **a number of issues,** :
: **with explanations where** :
: **necessary to assist** :
: **technicians to understand** :
: **it and put it in practice in** :
: **their workplaces.** :
.....

How does the Code work?

The objective of the Code of Practice is to assist in the control of emissions into the atmosphere from automotive air conditioning systems.

The Code does not constitute a technical design document and it must be used with other standards and codes of practice already in existence. In particular, AS 4211.1 - 1996 Gas recovery or combined recovery and recycling equipment.

Compliance with this Code of Practice is commensurable with Regulation 135 of the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 (the Regulations) made under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

The Code will become law when it is incorporated into the Regulations, expected to happen early next year, after the industry has made its comments.

INSIDE THIS ISSUE:
Mono-refrigerant days over
What is R744 anyway
Wire & Gas 2008
Search for young talent

The mono-refrigerant era may be drawing to a close

The story so far -

In the last issue, Hot Air reported on the latest consternation in Europe over which refrigerant gas will be appointed by the world car makers to replace R134a, which is being phased out for environmental reasons. There have been warnings about the CO2 technology, while the USA seems to favour R152a in a secondary loop system. Meanwhile, the fluorocarbon scientists are working away on an R134a replacement from the same chemical family, but with very low global warming potential. Since that report, VASA President Mark Padwick has been to Europe and this is his take on the way of the future.

"The world is nowhere yet near the final outcome," reports Mark Padwick.

"The considered view is that most car manufacturers will wait patiently for the outcome of the trials and tests of replacement fluorocarbons from the same scientists who produced R134a.

"There's a good reason for this. If, as is fully expected, giants like Honeywell and Dupont can produce a replacement refrigerant with low GWP, and an ability to be 'dropped in' without costly retrofit or redesign into the world's existing vehicles, then this will be worth the wait.

"All the chemical companies have admitted that there are issues with each of the Global Alternative Refrigerants (GARs) that might take time to resolve (one to two years) and no final resolution could be guaranteed," said Mark.

"All are feverishly doing further testing and the results are expected by December-January but no-one is holding their breath. The long term toxicity tests are unlikely to be finalised until 2011.

"So right this minute, there's no gas replacement," he said.

The wild card is CO2, considered to be one of the most environmentally benign solutions to the problem, but not without major design (and therefore cost) considerations. A car manufacturer which opts for CO2 is going to face the cost of redesign of the entire climate control system, and then have to worry about on-going maintenance of the system.

Warnings have already been issued by European experts about the difficulty of

maintenance issues with CO2 systems because of the extreme pressure under which they operate.

The US, according to Mark Padwick's latest information, has turned its back on CO2 systems, in favour of their home grown R152a refrigerant.

"There is a remote chance," says Padwick, "that one or two car manufacturers, driven by the desire to get to an environmental finishing line first, may opt for the CO2 system, but the feeling is that most manufacturers will wait on the outcome of GARs tests before making up their minds."

While it's likely that Australian vehicles will still be cooling on R134a for possibly the next 12 years or more, if vehicles fitted with CO2 systems start entering the local market after 2011, technicians are going to have to be trained to cope with the technology and that will suddenly be a big ask of TAFE and other training bodies.



Mark Padwick

Padwick is even suggesting that after 2011, Australian technicians may face having to maintain three different kinds of air conditioning systems, each of them requiring specific training and equipment.

The American favourite, 152a, is one of the training streams which will be required.

With 70% of Australian-bought vehicles now coming from other countries, and with the inevitable globalisation of components and car manufacture, Australia is no longer working in isolation with climate control systems.

"Every Australian technician working in this area is going to have to keep the foot on the ball and be technically ready for whatever direction the various car makers head," said Mark.

"It is going to be a challenge for the technicians of tomorrow, and it may mean a quantum change in the training regimes at our colleges and at industry workshops," he added.

An R744 primer

R744 is the chemical reference for carbon dioxide (CO2) used as refrigerant.

It is a naturally occurring substance that can be applied as a working fluid in different heating and cooling applications, due to its excellent heat transfer properties and its high volumetric cooling capacity.

R744 is non-toxic, non-flammable, non-ozone-depleting, environmentally friendly with a Global Warming Potential = 1.

The CO2 refrigerant used in MAC or heat pumps is an industrial waste product. Some industrial companies have developed systems to extract CO2 from their plants to process it and sell it as refrigerant.

R744 is not a totally new refrigerant. It was already used as a refrigerant in the mid-nineteenth century and its use steadily increased, reaching a peak in the 1920s.

After that, the natural refrigerant was displaced by chlorofluorocarbons (CFCs) that operated at much lower pressures. Due to the impact on the environment of CFCs, and later HFCs, CO2 was re-evaluated as an alternative refrigerant in the late 1980s.

A new way to contain the high pressure was discovered by Professor Gustav Lorentzen and his group of researchers from Norway, giving way to the application of transcritical R744 to different heating and cooling systems.

R744 can be applied in most heating and cooling systems such as in vehicles and buses, vending machines, coolers, commercial cabinets for supermarkets, containers and climate control systems for residences.

R744-based commercial refrigeration and freezing features reduced emissions of greenhouse gases, space savings for piping arrangements, reduced costs of piping arrangements, and insulation and energy efficiency

Some refrigeration cabinets working with R744 are already part of supermarkets in Europe and large-scale production of components could follow soon if the market conditions evolve favourably.

Source: www.r744.com



HERE ARE YOUR DIARY ENTRIES
January 2008 - Registrations
open (you will get a brochure)

Friday 27 - Sunday 29 June
2008

Wire & Gas Training
Convention and Trade Show
- Gold Coast Convention &
Exhibition Centre, Broadbeach,
Queensland.

A top line program of speakers, entertainers, personalities and vehicles is being assembled for the late June 2008 convention. (Note that it is not the traditional June long weekend)

A record number of 10 of Australia's top trainers will be running a full day of training sessions inside one of the huge halls at the Convention Centre. Famous racing car drivers and overseas speakers will feature in the plenary session on the Saturday morning.

The highly successful party will open both the convention and the big trade show on the Friday night. This is an entertaining mix of serious trade show and party, with street entertainers and musicians.

The traditional golf tournament will be held on the Friday, and the gala dinner on the Sunday night.

Here's the draft program as it currently stands:

Friday 27 June 2008

8.00am – 3.00pm Golf Day
 4.00pm - Registration open
 6.00pm – 9.30pm Grand Opening of Trade Show

Saturday 28 June 2008

8.00am - Registration opens
 8.30am - Convention welcome
 8.45am - Keynote Speaker 1
 9.30am - Keynote Speaker 2
 10.15am - Morning Tea (in Trade Show)
 10.45am - Keynote Speaker 3
 11.30am - Keynote Speaker 4
 12.30 – 5.00pm - Lunch and Trade Show (includes afternoon tea)
 5.00 – 6.30pm VASA inc AAE AGM
 6.30pm - Free evening

Time to recognise young contributors to environmental products and practices in the vehicle a/c industry

VASA members at all levels are being asked to seek out those innovative young people who may have contributed a product, a service or a practice to keep the country heading in a more sustainable and environmentally stable direction.

As one of the sponsors of the first CoolWorld Industry Awards, VASA is committed to finding and nominating someone from the vehicle climate control industry for recognition by the nation.

Among other things, the winner of the VASA-sponsored section will carry the title of the Young Mobile Air Conditioning Technician of the Year.

As VASA President Mark Padwick pointed out "VASA continues to honour its pioneers with special awards, but the emphasis needs to switch occasionally to the young brains entering the industry.

"Those of us who have been in the game for some time might think we've done it all and seen it all, but new generations, exposed to technologies which continue to challenge conventional practice, are sometimes better equipped to develop new ideas and new ways of doing things," he added.

This award will honour and recognise the achievements of a young person (under 30 years of age) who works as a technician in the vehicle air conditioning industry.

The award is open to any person, male or female under 30 years of age prior to 25 January 2008, who actively works within the industry at any level, from a retail service centre to a wholesaler or equipment manufacturer.



Sunday 29 June 2008

ALL DAY (Sessions approx 1 hr duration)
 - ON VEHICLE TRAINING – Choose up to 10 workshops.
 Lunch included.
 4.00pm - On Vehicle Training concludes
 6.30pm - Gala Dinner



The judges will be looking for an outstanding example of innovation, inventiveness or personal achievement which can be showcased to promote and advance this sector of the vehicle aftermarket.

Nominations for this award will be accepted only from members of VASA but those they nominate need NOT be members.

Judging criteria will be determined by the Board of Directors of VASA but all entries must be submitted with the following detail:

- Name, home address, phone number and date of birth of the person being nominated
- Employer or supervisor contact details
- Commencement date with current employer (month/year)
- Relevant previous employment details
- Details of TAFE and other industry training
- Employer or any other form of references, copies of certificates or awards that the nominee has received
- A statement, in bullet point format, describing the particular achievements for which this person is being nominated
- A description in your own words why you believe this person deserves to be recognised

FULL DETAILS AT www.vasa.org.au

***If medicos treated the human heart like some technicians treat compressors - we'd all be pushing up daisies!
...and try claiming that on warranty***

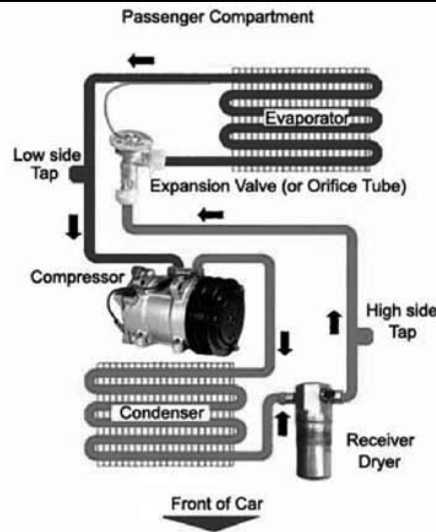
The basics of compressor handling

It is recommended that a new receiver-drier or accumulator-drier be installed if a compressor is replaced or an internal repair is made.

1 Keep dirt and foreign material from getting on or into the compressor or the a/c system. The area around a/c hose fittings should be carefully cleaned with a non-petroleum-based solvent before the connections are broken. All parts to be re-used or installed should be cleaned with a non-petroleum-based solvent and blown dry with clean compressed air or lint-free cloths.

2 Trouble free installation and operation of an SD compressor require:

- Correct** pulley alignment
- Correct** fit of compressor mounting surfaces to the bracket and correct fit of the bracket to the engine. Clearance between compressor and bracket should not exceed 0.2mm per ear for ear-mount compressors or 0.4mm total for two ears.
- Correct** torque of all mounting bolts and nuts
- Correct** drive belt tension



3 Never operate the compressor at high speed or for a prolonged time without a sufficient refrigerant charge in the system. Probable results are overheating, internal damage and seizure.

4 If an internal repair is performed on an R134a compressor, evacuate the a/c system for at least 45 minutes before recharging to remove moisture which may have been absorbed by the PAG oil in the compressor.

5 Parts which require lubrication before assembly, such as O-rings should be lubricated with clean 5GS refrigerant oil.

ARC turns up the heat on non-compliance

The annual reports of the Australian Refrigeration Council contain encouraging news for those technicians in the auto aftermarket worried about those workshops which are blatantly defying the new laws and not doing the right thing by the environment.

Only the Australian Government, through the Department of the Environment and Water Resources can prosecute and seek penalties, but the ARC audit team is already applying the pressure on non-complying workshops, with the first reports on non-complying audits already on the way to the Department.

CEO Alan Woodhouse advised members at the AGM in October that, from 1 November 2007 all non-compliant audits would be referred to the Department after 14 days, after which a 'Show Cause' letter would be issued.

The ARC has increased its 'drive-by' audits, from lists generated from the likes of Yellow Pages.

From these lists phone calls are made to enquire as to whether the organisation works with controlled substances. If found to be working without due permit, the auditors counsel the organisation to correct the situation and then follow up with a visit and incident report to the Department if a licence is not obtained.

The total of these 'desk audits' conducted in the year to 30/6/07 was 1,468. Another 1,285 audits of businesses suspected of working with controlled refrigerants were carried out in the same period.

After the first visit and issue of the application form, there's a follow-up visit via an incident reporting process if an application is not forthcoming.

More training is a desired by-product of licensing

The ARC continues to receive a regular weekly flow of licence applications, according to the annual report released in October.

Those issued with an experienced persons licence have very slowly converted to full, trainee, or transitional licence. This rate of change is seen to be consistent with an inability to produce formal qualifications. This has led to training licences for those who make the effort to gain qualifications.

A large number of applications have been allowed to expire and not be reapplied at the expiry of the first and second year.

The training fraternity have mobilised to increase the numbers of new apprentices and applicants seeking either a full trade qualification, a Recognition of Prior Learning (RPL) or a Recognition of Current Competencies (RCC) from training providers. Extra funding from the Australian Government has helped to bring training and assessment to country areas without easy access to fixed training facilities.

The net effect is a steady increase of transitions from a training (or Experienced Persons Licence EPL) licence to a full licence. This transition is expected to continue for a number of years. Some courses if commenced have four year completion cycles.

The introduction of staged communication to the industry at large and followed by a communication to the consumer is expected to reinforce the legal requirements to have the necessary permits as defined under the Act if working with, or trading in, controlled substances.

The number of EPLs has considerably reduced since the 30 June 2006. The reduction is either a conversion to a full licence, a conversion to a training licence on submission of proof of a training regime being commenced, or expiry of the permit.

Total licences issued in the automotive sector to 30 June 2007, were:

Trainee	1,490
EPL	5,438
Full	9,467

Hi and welcome aboard

VASA (inc AAAE) extends a hearty welcome to the auto electricians listed below who have climbed aboard our band-wagon of technician and workshop members.

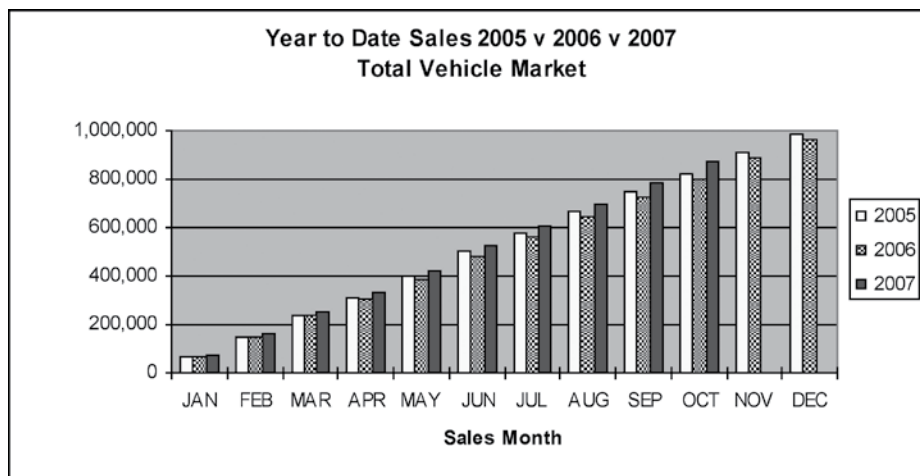
If existing VASA members know any of these workshops in your locality, do the right thing and drop around with a six-pack and shake them by the hand - then promise to work together to keep all customers in the VASA network. The move will do you both good.

Eagle Auto Electricians - Whittlesea VIC
Narrabeen Auto Electricians - Narrabeen North NSW
Precision Auto Electricians - South Nowra NSW
Wahroonga Auto Electricians - Wahroonga NSW
South Coast Auto Electricians - Bega NSW
Henshaws Auto Electrical Pty Ltd - Brookvale NSW
All Car Auto Electricians CROMER NSW

AND...there's been a great rush of new members to join VASA. A big welcome to the following:

Eny Auto Electricians - Moorabbin VIC
Southern Cross Mechanical Services - Bacchus Marsh VIC
Isaacs Auto Electrical - Marion SA
Isaacs Auto Electrical - Somerton Park SA
Ken Simpson Motors Pty Ltd - Mona Vale NSW

An afterlife in the aftermarket? You better believe it with sales like this **Toyota was October market leader**



Aftermarket technicians need have no fear about the future, provided they maintain their skills with the new technologies which are changing from vehicle to vehicle and month to month.

In three years time, when all these new vehicles come out of warranty, there is going to be a lot of aftermarket work to be won - regardless of the stamina of today's vehicles.

Figures released by the Federal Chamber of Automotive Industries reveal a bumper year for car sales to the end of October.

Total sales of all vehicles for the first 10 months of this year amounted to 871,651, an increase of 8.6% over the same period of 2006.

No surprise, but the only passenger vehicle to return a negative result this year was the large SUV - sales dropped by 22.1%.

Hentze
looks
for new
horizons



Julian Hentze, national sales manager for ADAIR since mid 2004, has packed his bags and newly acquired Green Card, and will head to America before the end of the year to carve a new career for himself in the automotive industry.

For some years, Julian has played key roles in a number of industry sectors, and will be missed particularly on the Committee of the Wire & Gas Convention.

An automotive engineer, with a diploma in management, he specialised in marketing and branding, and took an active interest in a number of industry groups. He has been a member of VASA for years, and was also an associate member of AAAE. He holds a Refrigerant Handling Licence, and served on the Safety Institute of Australia and the Australian Safety Equipment Industry Association.

In his time with ADAIR, he redefined the company's marketing position, created their first air conditioning catalogue, and introduced regular training sessions.

In the sedan range, the biggest seller this year was the light car which showed a 9.2% increase over the same period last year.

The upper large passenger vehicles, however, showed a 37.1% increase in sales, but that equates to a total number of 5,787 vehicles sold in the year.

The types of vehicles sold this year reveal an interesting trend towards fuel economy - again, no surprise, but the figures are startling.

In private passenger vehicles alone, diesel powered vehicles showed the biggest increase by far, with a 60.6% increase in sales over last year. LPG vehicles, conversely, dropped sales by 45.5%, while standard petrol vehicles showed a 5.5% increase, against hybrid's 13% increase.

Note: This technical article is obviously based on USA vehicles and measurements. However, the VASA Board considered the information is relevant enough to Australasian technicians to run it regardless.

THE MOBILE AIR CONDITIONING SOCIETY WORLDWIDE
MACS SERVICE REPORTS
Repeat compressor failures

By Paul Weissler – MACS Technical Correspondent

This is the last article in the series devoted to repeat failures in compressors.

The reasons are many and varied, and most are related to workshop practices.

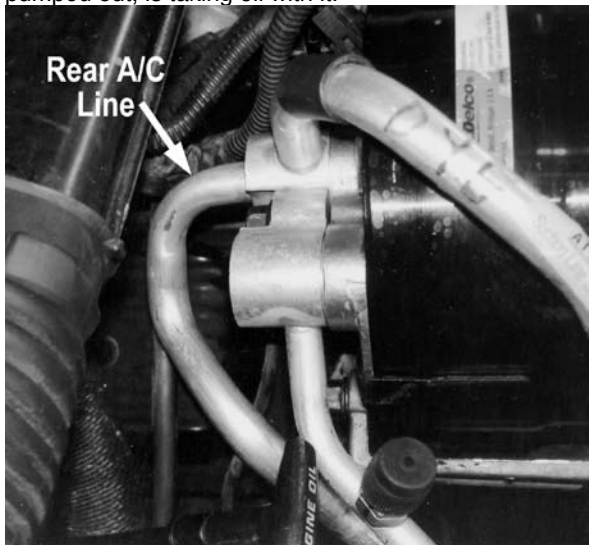
This series is a must-keep article for every workshop. If you missed out on the first two, and you are a financial member of VASA you will find the whole series at www.vasa.org.au

Repeat Radial-4 failures on 1994-95 Suburbans

Delphi's Radial-4s may not be modern high-tech, and they're not known for ultra-quiet operation, but after early teething pains, they proved to be reasonably durable.

Though they haven't been in OE production for years, many vehicles on the road have them, so brand-new replacements are still being manufactured.

And some Radial-4s have been failing on 1994-95 Chevy/GMC Suburbans with rear air, and more than one replacement per vehicle. It isn't the compressor. The problem is that the compressor is being hit with liquid refrigerant, which when it's pumped out, is taking oil with it.



Arrow points to refrigerant line to rear A/C from R-4 compressor on 1994-95 Chevy Suburbans, so open TXV allows liquid refrigerant to return to compressor, where it washes out oil.

The root cause is a defective rear expansion valve.

Symptom: the compressor will get very noisy under low-cooling loads as a result. However, there are lots of other possible causes, so here again, is one example of why you need an accurate refrigerant charge in the system.

There's a straightforward way to check the rear TXV on these models, with a pyrometer on the suction line, (accessible behind the right rear wheel). Push back the rubber protective sleeve and clamp or tape the pyrometer probe to the suction line. Run the engine at idle, system in recirc, rear blower off and front blower on low-medium speed.

After 15-20 minutes the pyrometer should read 32-34 degrees F, which indicates the expansion valve is working properly. If the temperature reading is 46 degrees F or higher, the expansion valve is stuck open and allowing refrigerant floodback. Yes, we know this is time-consuming, but did you just want to guess?

The fix: the better choice in an OE rear expansion valve has a straight capillary (Parker Hannifin Part No. 52459601), and if it's what you get, check the attachment (should be with two claws) and when you install, wrap with insulation and tape.

However, you may be offered a superseding part, one with a coiled end, for which a specific clamp is provided.



However, the aftermarket grapevine says the accuracy of the sensing may not be nearly as good. Even unwinding it carefully may not provide an installation with as good and reliable sensing over the long term, according to those familiar with the parts.

In addition, the clamp provided with the coiled-type would be unsuitable. For the moment, back to the subject of refriger-

No short cuts - no substitutions

ant charge accuracy. If you don't have an accurate charge in the system, those pyrometer temperature readings are meaningless. However, we've got a variation on this problem that really is something else: a total of six (count 'em six) compressors on a '95 Suburban. It raises additional issues, including that rear TXV.

Five 1995 Suburban Radial-4s are gone in a matter of months

When the Suburban Radial-4 in one case repeat-failed, the shop didn't check service bulletins.

It thought all it needed was to solvent-flush the system and then install a (new) replacement. However, debris had blown back into the suction line and of course, it hit the new compressor and caused still another failure.

Compressors Nos. 3, then 4 and 5 were installed, apparently more with a sense of desperation than a willingness to step back and think.

A look at the suction manifold following the 5th failure showed that no screen had been installed, and a look into the suction port of one of the failed compressors showed a chunk of debris wedged in. (See pic at the top of the next page)

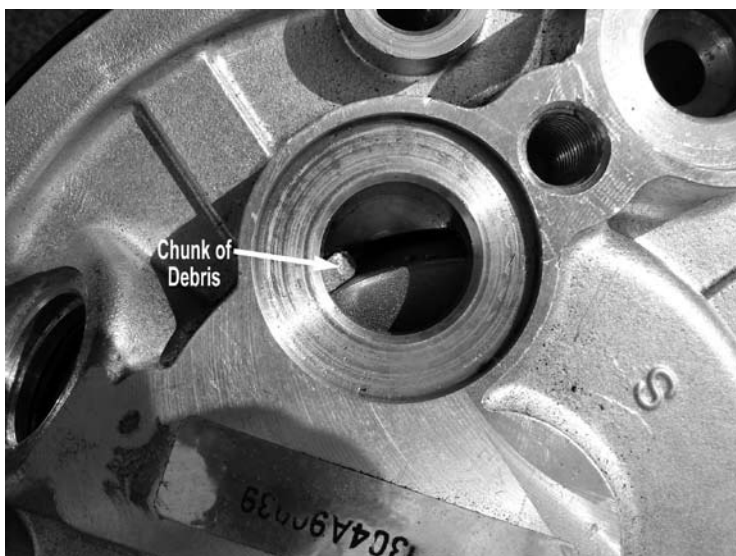
Backing up a bit: with No. 4 had finally came a new rear TXV, one that had the same superheat rating but with the coiled capillary tube, and it was installed, but it wasn't the answer.

Flushing also wasn't doing the job on this front-and-rear air system, and after the fifth compressor failed, hard thinking and looking turned up a debris-loaded screen on the rear TXV.

At this point, highly-experienced outside



advice insisted on more than solvent-flushing and rear TXV screen replace-



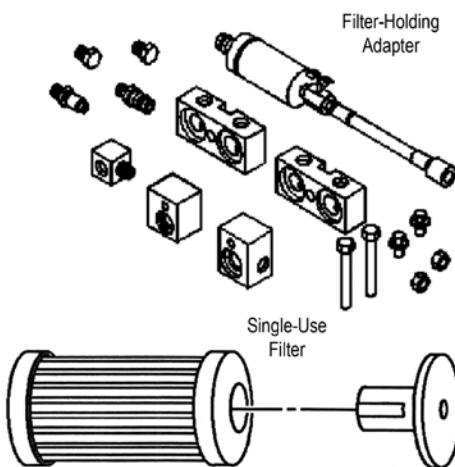
teams and the service equipment suppliers with whom they work, plus the debris from failures it was seeing.

GM decided it wanted to flush only to remove dirty oil, such as from desiccant failure and a small amount of metal. It could do that with liquid R-134a, adapters and a special port on

its new recycling machine, which dealers already had, rather than add a new machine and flushing agent. GM had used liquid-line filters for some time, was satisfied with them, and trusted suction screens as finishing touches. And as part of factory fixes, it changes accumulators and even condensers where indicated.

An important note: even if you flush with liquid refrigerant and aren't trying to get out a lot of debris, you still have to remove the orifice tube and expansion valve (rear system in this case), the accumulator and any lines with mufflers.

GM has an adapter kit (No. 45268) to bridge the joints, although shops also have made their own, such as by taking failed expansion valves and drilling through them. But the shop-made adapters won't have the filter the GM kit includes.



The GM approach is to back-flush front and rear systems separately, front first, blocking one while flushing the other.

And with the needed refrigerant recovery, you can see why it's time-consuming, as

noted earlier in this report. Further, many recovery machines are not designed for refrigerant flushing.

That explains why a lot of shops try to do the job with a gun and solvent flush, or even something like the Ford-approved machine and flush. GM can't tell you if that will work, and Ford certainly can't tell you what its equipment does on GM vehicles.

We can tell you that an independent shop that doesn't do liquid refrigerant flushing is unlikely to be successful trying to fix this problem with a solvent flush and minimized replacement of parts.

Because a refrigerant flush is time-consuming, GM even requires dealers to get specific approval for it. And the flat-rate time on the factory fix is about six hours (figure a lot more if you don't do this job regularly, have to order parts, etc.), and that doesn't include the flushing operation.

With everything, this job surely can run over a three-day period. It can get very pricey if the vehicle is out of warranty, explaining why independent shops look for safe shortcuts and fewer parts replacements. Sorry, we understand the issue, but the shortcuts have led to repeat compressor failures, and a new or even quality reman compressor is not pocket change.

GM only approves liquid refrigerant flushing if there was a catastrophic failure of the compressor or some other cause of oil contamination, desiccant bag failure, evidence of contaminated refrigerant (GM dealers have identifiers, and every A/C specialist should too) or a gross over-charge of oil.

It's backflush for most of these, but there also is a forward flush procedure (using a check valve that has been removed for backflush). Forward flush is just for contaminated refrigerant oil (with engine oil maybe?) and/or contaminated refrigerant.

Otherwise, GM relies on such parts replacements as expansion valve or orifice tube, accumulator and certain hoses (and the condenser if necessary), plus installing the liquid line filter. GM also recommends a suction side screen in the compressor manifold.

DENSO doesn't approve suction screens, but it also doesn't approve trace dye, and GM not only uses trace dye on the assembly line, but specifies adding it during this factory fix.

We suspect that dealers will be installing the screen, and cautious independent shops should too. □

ment. Although the coiled-capillary rear TXV may not have been the sole cause of another repeat failure, there was suspicion at least it had contributed.

Installing the OE type with the straight capillary would likely produce an installation that senses more accurately.

The orifice tube (which had metal debris) was replaced, a suction side screen also was installed and an in-line filter was put in the liquid line. And yes, an OE rear TXV with the straight capillary was located and installed.

Finally, the funerals were over. No. 6 lives!

Repeat Denso failures on Chevy Tahoe/GMC Yukon and Suburban with rear air

The root cause of the repeat-failures of the DENSO compressors on Tahoe/Yukon/Suburban is oil starvation, but it's a problem unrelated to the Suburbans.

In certain operating conditions, the oil accumulates in the rear evaporator (typically front A/C off, rear on with lower blower). It's a known problem, but there are some important things you should understand about this fix specifically, and General Motors service procedures for compressor failures.

For this fix, a lot of new parts are required – just flushing and replacing the condenser, accumulator, orifice tube won't produce a lasting repair. Now let's talk flushing:

As we've noted earlier, unlike Ford, GM never validated a solvent flush. Why? It's a difference in service procedure philosophy among the A/C service engineering

The complete job

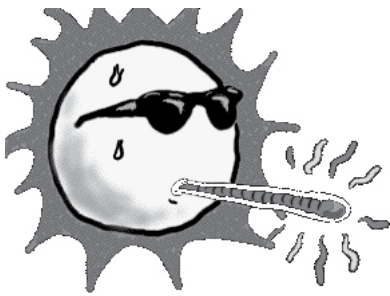
When you're installing replacement parts from an aftermarket supplier, you are likely to be given a recommended procedure, and if you want warranty coverage, that's what you have to use.

Sure, obviously required steps (OE or aftermarket supplier) following a catastrophic compressor failure normally include cleaning the refrigeration system and/or replacing parts, deep-vacuuming and an accurate recharge, followed by complete leak detection and any needed repair.

However, as part of "Doing the Complete Job," Four Seasons also has long recommended (1) checking coolant temperature and doing any necessary cooling system service; (2) checking airflow and servicing the air director system, from deflectors and covers to the fans; (3) checking clutch operation, including voltage supply.

The bottom line – from whoever supplies your parts – is the same: no shortcuts, no substitutions.

Air conditioning technicians - have your gauges ready...



The national outlook for maximum temperatures averaged over summer (December to February) shows a moderate shift in the odds favouring warmer than average conditions in south eastern Australia, including Tasmania.

In contrast, cooler daytime temperatures are favoured in southern Queensland and northeastern NSW.

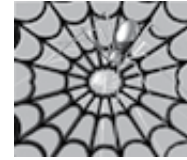
A safe, happy and hot festive season to all VASA inc AAAE members, families and staff



from President Mark Padwick, Vice President Mark Mitchell, treasurer John Blanchard,

directors Barry Rogers, Dave Jackson, Deyan Barrie and Jeff Smit and CEO Ken Newton.

The last word...



The AAAE website has now closed, but in time much of the information which was of interest to auto electricians will be incorporated into the VASA website.

Time is running out for those former AAAE members who have not yet joined VASA inc AAAE. They will receive a final notice in January.

For former AAAE members wishing to ask any question of their directors, please call Jeff Smit at 02 9439 6772



or email at towermotors@bigpond.com or mciverengineering@bigpond.com.

Deyan Barrie can be contacted on 02 9476 6277 or at deyanbarrie@car-electrics.com.au.



Hot Air is the only

official journal of VASA inc AAAE and will be published every two months and mailed to members. All inquiries should be directed to the CEO, Ken Newton at info@vasa.org.au, or ph 07 5591 6274 or fax 07 5591 8172. Website address is www.vasa.org.au

VASA OFFICE ON HOLIDAYS

The VASA secretariat will be closed from Monday 10 December until the first week in January. This means neither phone nor emails will be answered during that time. If any member has a major issue for which they need VASA help, they should phone one of the VASA directors (see full contact list at www.vasa.org Click on 'about VASA' on the left hand side navigation bar).



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...AND SO I SAID, "NO, YOU CAN'T HAVE A PONY FOR CHRISTMAS..."



HARRY, LOOK OUT! DORK ON A CELL PHONE!!