



Subject: A/C System Lubricating Oil—Re-release of TSB #35	TSB #: 36 6-10
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Initial Once Read:	

The following R134a PAG (Poly Alkaline Glycol) A/C system lubricating oil matrix is an update to our Technical Service Bulletin (TSB) number 35 released May 2010.

Just like a car engine “OILS AIN’T OILS” it is critical to the internal components of the A/C compressor that the correct type / viscosity of lubricating oil is used. PAG oil is the OEM selected lubricating oil to be used with R134a A/C systems.

PAG oils are most commonly classified in the A/C industry as PAG 1 and PAG 2.

There are basically 3 viscosities of PAG lubricating oil:

- ISO VG46 Light viscosity - PAG 1 (Denso ND-8, Sanden SP-10)
- ISO VG150 Medium viscosity
- ISO VG100 heavy viscosity - PAG 2 (Denso ND-9, Sanden SP-20)

PAG 1 - ADAIR part number 250ml - DUNI046, 4 litre - DUNI4000 suits Sanden (C type), Calsonic, Delphi, Delco, Ford, Visteon, Halla, Hyundai, Hitachi, Keihin, piston, York, Tecumseh, Zexel, Diesel Kiki, Visteon, Ford, Mitsubishi heavy industries (MHI), Seltec, Tama, Unicla.

PAG 2 - ADAIR part number 250ml - DUNI150, 4 litre - DUNI4001 suits Delphi, Delco Matsushita, Sanden (B type), Zexel, Sieko Seiki, National Panasonic

Please adhere to the recommended refill and top up quantities required.

REMEMBER: Too little oil = compressor noise. Too much oil = excessive high side pressure.

There are also lubricating oils such as Ester, PEG or POE, these synthetic oils are suitable for both R12 and R134a A/C systems and will mix with PAG oil (R134a) and mineral oil (R12).

ADAIR part number 235ml – DUNI100, DUNI1100,

1 Litre – DUNI1000

4 Litre – DUNI4000

Cautions with all oils:

- Hygroscopic. Always keep containers capped.
- Do not spill on painted surfaces. Wipe off immediately.
- Do not allow to contact bare skin or eyes. Wash off immediately.

Do not inhale or swallow.



COMPRESSOR PAG OIL APPLICATION CHART (PAG - 1 = SP-10, N.D-8. PAG - 2 = SP-20, N.D-9.)

<u>Compressor</u>	<u>Viscosity</u>	<u>Adair P/N</u>	<u>X-Reference</u>
Calsonic V6,DK14,NVR140	ISO VG46	DUNI046	PAG-1
Delphi / Delco A6,R4,DA6,HR6,V5,V7,CVC 7	ISO VG150	DUNI110	PAG-2
SP-10,SP-13,SP-15,SP-21	ISO VG46	DUNI046	PAG-1
Denso 6P,6C,6E,6D,10P,10PA, 6SEU16C (Holden VE)	ISO VG46	DUNI046	PAG-1 (ND-8)
TV10,TV12,TV14	ISO VG100	DUNI110	PAG-2 (ND-9)
Ford, Visteon Genuine Ford WSH-M1C231-B,F26	ISO VG46	DUNI046	PAG-1
Halla, Hyundai (HCC) FS10,FX15	ISO VG46	DUNI046	PAG-1
Hitachi MJS130,MJ123/167,SWP123/167	ISO VG46	DUNI046	PAG-1
Hyundai FX15	ISO VG46	DUNI046	PAG-1
Keihin, Kihon AN150, CN150	ISO VG46	DUNI046	PAG-1
NVR140	ISO VG46	DUNI046	PAG-1
Matsushita S1150	ISO VG100	DUNI110	PAG-2
Mitsubishi Heavy Industries (MHI) FX80,FX105,MSC90,MSC105	ISO VG46	DUNI046	PAG-1
National Panasonic NL1300,NL1500	ISO VG100	DUNI110	PAG-2
Sanden SD 7 (C type) Splined input shaft	ISO VG46	DUNI046	PAG-1
SD 5,SD 7 (B type) Keyway input shaft	ISO VG100	DUNI110	PAG-2
TR70,TR90,TR105	ISO VG46	DUNI046	PAG-1
TRS,TRV90	ISO VG46	DUNI046	PAG-1
Seiko - Seiki SS140,SS170,SS805T	ISO VG100	DUNI110	PAG-2
SS806T,SS110,SS850	ISO VG100	DUNI110	PAG-2
SS140PSV,SS170,PSVSS	ISO VG100	DUNI110	PAG-2
Seltec TM13,TM15,TM16	ISO VG46	DUNI046	PAG-1
Tama TM08,TM13,TM14,TM16, 26,TM32	ISO VG46	DUNI046	PAG-1
Tecumseh, York HG100,HGS,HGB,209,210 Series	ISO VG46	DUNI046	PAG-1
Unicla DA299, DC120,UC45,UC90	ISO VG46	DUNI046	PAG-1
UPS105/107/108/109/110	ISO VG46	DUNI046	PAG-1
UPF150,UPF170,V120/150,VA150/170	ISO VG46	DUNI046	PAG-1
Y170,Z150,Z170	ISO VG46	DUNI046	PAG-1
Zexel / Diesel Kiki DKV-C,DKS,DCW17	ISO VG46	DUNI046	PAG-1
DKS15,DKS1534,DKS17	ISO VG46	DUNI046	PAG-1
DKV-D,DCV-A,DKV14 (Rotary vane models)	ISO VG100	DUNI110	PAG-2
DKC-14C,DKV-14D,DKY-14 (Rotary vane models)	ISO VG100	DUNI110	PAG-2