

Compressor oils and refrigerants

Mixing old and new

- > With the new R1234yf refrigerant reaching Europe in 2017, DENSO's A/C experts explain which mixtures will work and how to avoid causing costly damage by using incorrect oils.

New requirements

Since 1 January 2017 all new manufactured vehicles with destination Europe has to have an A/C system filled with the new type refrigerant R1234yf. This means that vehicles which were originally designed for R134a type refrigerant and already manufactured before the first of January 2017 needed a manufacturing upgrade of the vehicle A/C system to R1234yf type refrigerant, to comply with the new EU regulation.

The update also brings with it a new type of compressor oil for workshops and suppliers to be aware of.



In with the new

DENSO uses ND-oil 8 for its R134a type refrigerant compressors, a PAG 46 oil. The new refrigerant type uses ND-oil 12, also a PAG 46 oil but with additives specifically for the R1234yf type refrigerant.

However, this doesn't mean the two oils are interchangeable; while ND-oil 12 can be used for both R134a and R1234yf, it doesn't work the other way around and ND-oil 8 cannot be used for R1234yf type refrigerant.

It can get confusing with the number of different compressors, each with a specific DENSO oil. To clear this up, there is an overview of different types of DENSO oils for R134a and R1234yf type refrigerants which are available to the aftermarket on the following page.



ND-OIL 8, 250CC	ND-OIL 11, 250CC	ND-OIL 12, 250CC
DENSO P/N DND08250	DENSO P/N DND11250	DENSO P/N DND08250
Available in 250 ml	Available in 250 ml	Available in 250 ml
		
PAG 46 oil for R134a	POE oil for R134a & R1234yf	PAG 46 oil for R134a & R1234yf
DENSO ND-oil 8 is used in piston and rotary type (scroll & SV) compressors with R134a type refrigerant	DENSO ND-oil 11 is used in the electric driven scroll compressors with either R134a or R1234yf type refrigerant	DENSO ND-oil 12 is used in piston and rotary type (scroll) compressors with either R1234yf or R134a type refrigerant



⚠️  

 **R-1234yf** 525g +/-15g

 **PAG** ND-oil 12

⚠️ 

 **R-134 a** 525g +/-15g

 **PAG** ND-oil 12



⚠️ 

 **R-134 a** 525g +/-15g

 **PAG** ND-oil 8

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 **R-1234yf** 525g +/-15g

 **PAG**

Mixing oils

While mixing A/C compressor oils is usually not recommended, as it can lead to A/C compressor damage and failure, the new ND-oil 12 can be used with both R1234yf and the old R134a type refrigerants.

However, once A/C systems have been upgraded to R1234yf type refrigerants, A/C compressors pre-filled with ND-oil 8 can no longer be used in the system. When R1234yf type refrigerant comes in contact with ND-oil 8, it will decompose and resin parts of the A/C system will start to deteriorate, so it is never recommended to use ND-oil 8 in combination with R1234yf type refrigerant.

The new ND-oil 12 can be used in R134a type refrigerant systems without needing to flush the system and remove the remaining ND-oil 8 from the A/C system, though technicians must make sure there is no dirt in the A/C system.

Important

Always check the compressor installation guide for the right installation procedure. You will find the compressor installation guide in the box with the new compressor, in TecDoc and on our aftermarket website: www.denso-am.eu

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