Technical Information

Visco fan

General points

For heat dissipation in truck and powerful car engines, fans and fan drives which provide cooling air particularly efficiently are required in addition to powerful coolers. Visco fans (Fig. 1) are made up of a fan wheel and a Visco clutch. They are used in longitudinally mounted engines, are installed in front of the radiator (in the direction of travel) and are driven via a V-belt or directly by the engine.

Fig. 1

Design/Function

The fan wheel (Fig. 2) is made mainly of plastic and is screwed to the Visco clutch. Number and position of the fan blades varies depending on the design. The housing of the Visco clutch is made of aluminium and has numerous cooling ribs (Fig. 3). The Visco fan can be regulated by a purely temperature-dependent, self-regulating bi-metal clutch. The regulating parameter here is the ambient temperature of the coolant radiator. A further variant is the electrically driven Visco clutch. This is regulated electronically and actuated electro-magnetically. In this case, input parameters of various sensors are consulted for regulation. Further information can be found in the Technical Information sheet "Visco Clutch".

Fig. 2

Effects of failure

A faulty viscous fan can become noticeable as follows:

- Heavy noise development
- Increased engine temperature or coolant temperature

The following can be considered as possible causes:
- Damaged fan wheel

Fig. 3

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- Loss of oil/leak
- Soiling of the cooling area or bi-metal
- Bearing damage

Troubleshooting

Test steps towards recognising faults:

- Check coolant level
- Check the fan wheel for damage
- Make sure no oil is leaking
- Check the bearing for play and noises
- Check the attachment of fan wheel and Visco clutch
- Check the air baffle plates/air cover to make sure they are present and a tight fit

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