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7) Technical data

To maintain clarify, only data relevant for engine installation and operation will be stated in the Manual.

◆ NOTE: Connecting dimensions, filling capacities, drive and reduction ratios, electric output etc. can be found in the respective chapter of engine installation.

7.1) Operating limits

1. Takeoff speed: ..... 5800 rpm. (5 min.)
   max. continuous speed: ..... 5500 rpm.
   idle speed: ..... around 1400 rpm.
2. Time limit for engine operation at weightless condition and with negative gravity acceleration: ..... max. 5 sec at max. -0,5 g
3. Oil pressure: see fig. 46
   max. 7 bar (100 psi) ..... (at cold start a pressure of up to 7 bar =100 psi, is permitted for a short period).
   min. ..... 0,8 bar (12 psi) (below 3500 RPM)
   normal ..... 2,0 - 5,0 bar (29-73 psi)(over 3500 RPM)
4. Oil temperature (see fig. 45) reading
   in feed line to engine: ..... min. 50° C (120° F)
   max. 130° C (266° F)
   normal operating temperature: ..... 90 ÷ 110° C (190 ÷ 250° F)
5. Cylinder head temperature: ..... see section 11.6.2
6. Exhaust gas temperature (EGT): ..... max. 880° C (1620° F) at take off
   max. 850° C (1560° F)
   normal operat. 800°C (1470° F)
   (reading c. 70 mm = 2,75 in. after exhaust flange)
7. Range of operating temperature: ..... +50 (120°F) to -25° C (-13° F)
8. Ambient temperature for electric components: (fig.4, pos. ⑳) max. 80° C (176° F)
9. Fuel pressure: ..... 0,15 ÷ 0,4 bar (2,2 ÷ 5,8 psi.)

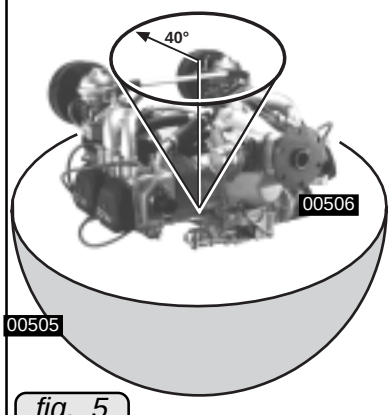

fig. 5

(see fig. 22 and 23) ..... max. 0,4 bar (5,8 psi.)10.Banking of plane: (if not stated otherwise) deviation from the effective vertical ..... max. 40°

Up to this inclination the dry sump lubrication system warrants adequate lubrication in every flight situation.

7.2) Installation dimensions (all dimensions in mm)

See fig. 2, 3 and 4.

02017

	standard engine version		
	pos. (+)	neg. (-)	total
max. dimension in x axis	8,5	-581	589,5
max. dimension in y axis	288	-288	576,0
max. dimension in z axis	118	-276	394,0

◆ NOTE: Dimensions to point of reference (P). See fig. 2, 3 and 4.

7.3) Weights

Weight of engine defined to the following conditions:

☞ **Engine dry** from serial production (see chapter description of design)

Engine weight Version S2 and S4: ..... 58,3 kg (128 lb.)
Version S3: ..... 61 kg (134 lb.)

Weight of external generator assy.: ..... 3,0 kg (6,6 lb.)
vacuum pump assy.: ..... 0,8 kg (1,76 lb.)
hydraulic governor assy.: ..... 2,7 kg (6 lb.)
engine suspension frame: ..... 2,0 kg (4 lb.)

02018

7.4) Centre of gravity of engine and standard equipment

See fig. 2, 3 and 4.

	engine from serial production S2	auxiliary alternator	hydraulic governor	vacuum-pump
centre of gravity in x-axis	-316	-100	-276	-255
centre of gravity in y-axis	-5	139	0	0
centre of gravity in z-axis	-83	6	56	56

◆ NOTE: Dimensions to point of reference (P). See fig. 2, 3 and 4. 02019

7.5) Moments of inertia in kg cm2

See fig. 2, 3 and 4.

	version S2 / S4	version S3
moment of inertia around axis x1 - x1 (kg cm2)	11 100	11 600
moment of inertia around axis y1 - y1 (kg cm2)	10 900	11 390
moment of inertia around axis z1 - z1 (kg cm2)	17 400	18 200

11.6) Operating Limits

The operating limits (max. permissible cylinder head temperature) are dependent on the engine design but also essentially on the coolant used.

The hottest measuring point (cylinder 2 or 3) is to be specified by testing. For this purpose, see section 6.3 Engine Views. This is dependent on the installation (pulling or pushing propeller design).

The coolant to be used is defined clearly in the Operators Manual. Depending on the installation conditions, conventional coolants can also be used. The provision of proof about the max. reachable cylinder head temperature and thus the coolant to be used is the responsibility of the airplane manufacturer in regard to 11.6.1 and 11.6.2

■ CAUTION: The coolant to be used and its concentration is to be communicated in written form to the owner.

◆ NOTE: From ROTAX® a warning sticker is to be delivered for the water-free coolant which is mounted separately on the expansion tank. When using this coolant, the warning sticker is to be mounted on the radiator cap in such a manner prior to delivery that the opening pressure (3) applied on the radiator cap remains visible. For this purpose, see fig. 16/1.

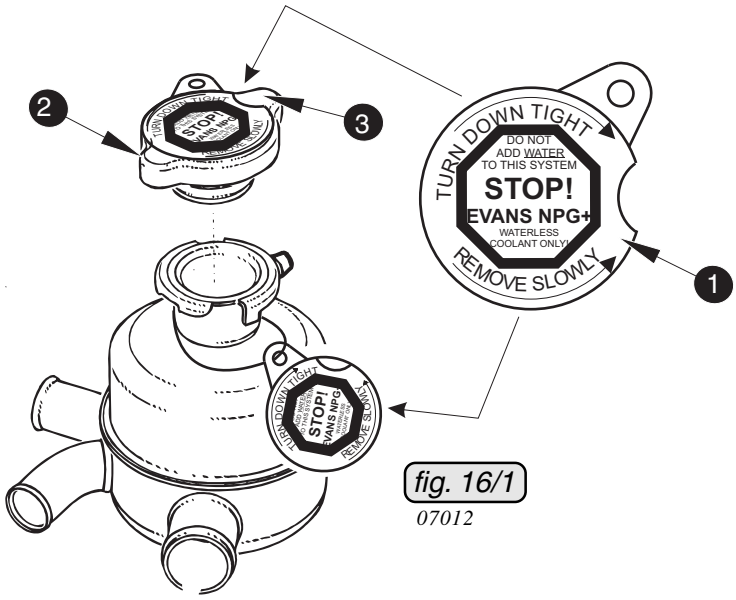

fig. 16/1
07012

1 Warning sticker
2 Radiator cap
3 Excess-pressure information of radiator cap

11.6.1) Water-free Coolant

- max. permissible cylinder head temperature
  see Operator's Manual section 10.1) General limits of operation.
- Coolant
  see Operator's Manual section 10.2.1) Coolant.

11.6.2) Conventional Glycol / Water Coolant Mixture

The boiling point of conventional glycol / water coolant concentrate depends on the mixture ratio and on the system pressure, i.e. radiator cap.

Corresponding to the following table, the max. permissible cylinder head temperature is limited depending on the coolant concentrate used and may not be exceeded.

radiator cap	max. permissible cylinder head temperature
0.9 bar (13psi)	115 °C (239 °F)
1.2 bar (17.5psi)	120 °C (248 °F)

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During exclusive operation within the max. permissible cylinder head temperature, the following coolant can be used in the corresponding mixture ratio:

	Mixture ratio %**	
Description	**concentrate**	**water**
BASF Glysantine Anticorrosion*	50	50

07001

* or equivalent

** 50% antifreeze concentrate and 50% pure water, or an equivalent premixed liquid

■ CAUTION: The antifreeze (frost protection) of this mixture is to be observed according to the manufacturer's specifications.

■ CAUTION: The correct mixture ratio is to be observed since otherwise the coolant can thicken and as a result can lead to damages to the cooling system.

23) ROTAX Authorized Distributors for Aircraft Engines

See current issue of Operator's Manual section 14 or in the Internet on the official website **www.rotax-aircraft-engines.com**.