



## SafeStart 000-series

**Characteristics:** Flat conical flange

**DEFA no:** 001-099

This heater can only be installed on cast iron engine blocks. The heater flange consists of a conical circular disk (B) and the heater is press fitted in a core plug hole.

000-series heaters are used for engines with sufficiently open space in the water jacket (C). The complete active heater element (A) has to be surrounded with coolant.

Tests made on a medium size vehicle, shows that a 600W 000-series heater will increase the coolant temperature approx 50o° related to the outdoor temperature when connected in 195 minutes at an outdoor temperature of -17o° or colder.

After 195 minutes the system has achieved thermal balance. Longer heating time that 195 minutes at -17o° or colder is energy dissipation. For that reason we recommend you to use a timer. Please look at the product sheet for DEFA SmartStart™ or DEFA Futura.

DEFA AS is conforming to the requirements of both ISO 9001-2008, ISO 14001:2004 and OHSAS 18001:2007. In addition to this, our engine heaters and cables are conforming to the requirements of ISO/ TS 16949:2002.

### Item number

DEFA no.: From 411001 to 411099.  
Weight: Varies depending on diameter and size.  
Up to 25-pack. Varies with the size of the heater.

### Part of

Engine pre-heater is supplied separately because of special adapted solutions for a variety of engines and vehicles.

### Installation

Install the heater according to the enclosed installation guide.  
**ONLY** Install the heater on vehicles listed in the installation guide.  
Installing DEFA heaters must only be executed by authorized garages.

### Use

**Normal usage** - DEFA engine heaters is dimensioned for “normal usage”. DEFA defines “normal usage” as; 3 connections for 3 hours pr. 24 hour based upon 150 users days a year (5 months a year).

**Professional usage** - It is necessary to make a yearly function control and if necessary install a new heater to obtain necessary extent of service on emergency vehicles or power supplies where the heater is connected more or less 24/7. This yearly service cost will not be covered by DEFA AS.

**Pulse power** - Some car parking areas are using interval (pulse) power timers turning the power On and Off several times per hour. Using DEFA engine heater in suchlike parking facilities will not be considered as “Normal use” and claims will be declined.

### Technical specifications

Voltage [V]	230
Power [W]	400-1530
IP rating [IP]	44
Certifications	EMKO-TUB(61)NO 293/91 EN 60335-1, EMKO-TSB(61) NO293A94

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