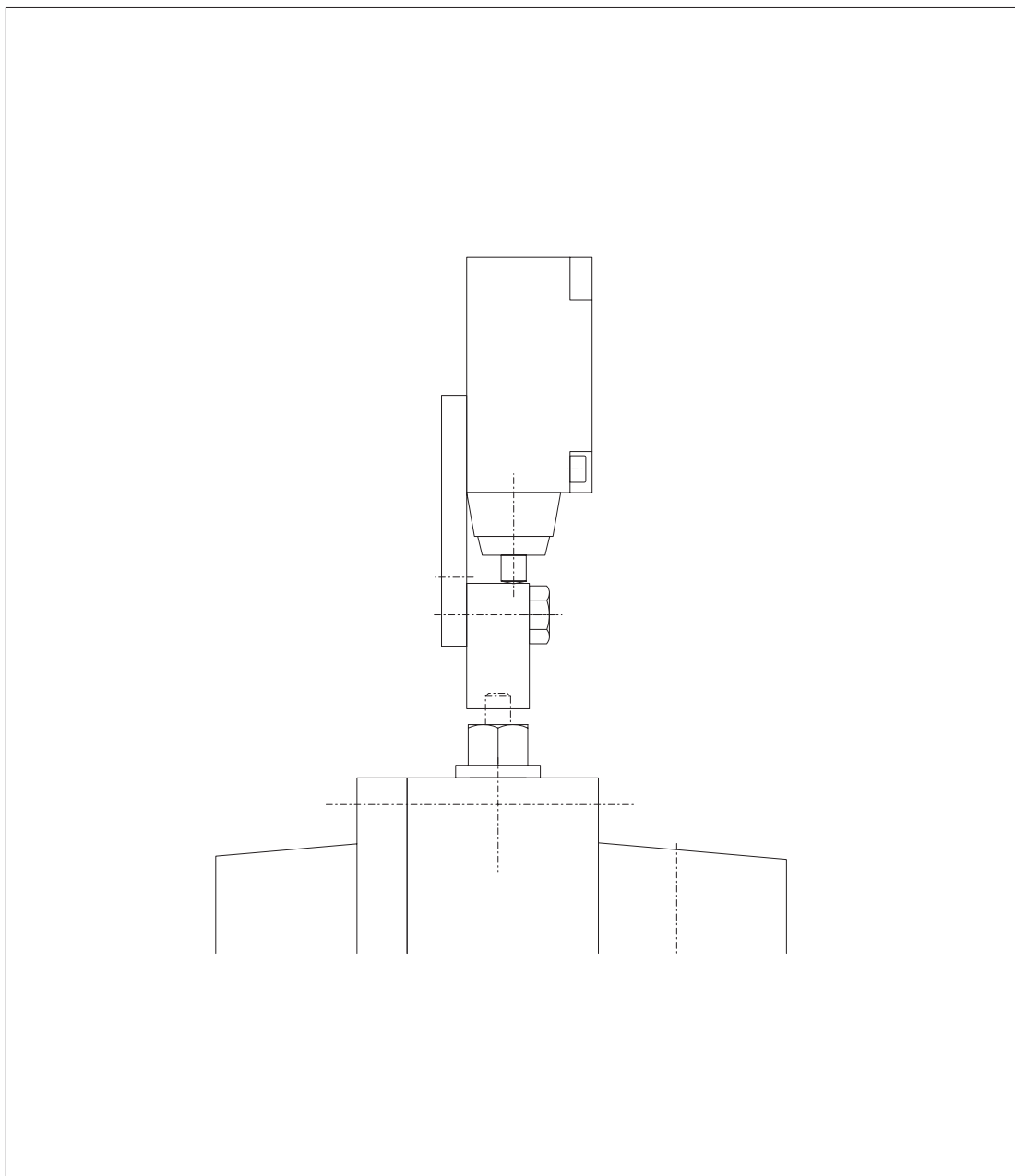


# Operating Instructions

**BA 4600.2 EN 06.03**

**FLUDEX thermal circuit-breaking equipment**



**FLENDER**

**Caution!**

Installation and start-up must be carried out by properly trained specialist personnel. Please read these operating instructions carefully before starting up. We accept no liability for personal injury or damage due to incorrect handling.

## 1. Application

Fitting thermal circuit-breaking equipment can prevent leakage and loss of hydraulic fluid as well as environmental hazards and contamination caused by an overheated coupling.

Thermal circuit-breaking equipment can be used from size 297 up and up to a peripheral speed of 50 m/s. The maximum permissible operating speeds for the individual sizes are shown in the following table.

Size	297	342	370	395	425	450	490	516	565	590	655	755	887
max. perm. speed 1/min	2500	2240	2100	2000	1900	1800	1650	1600	1500	1450	1250	1100	1000

The fuse screw with a high operating temperature is left in the coupling as an emergency safety device.

Retrofitting of thermal circuit-breaking equipment with already installed FLUDEX couplings is possible without reworking. In this case the thermal circuit-breaker must be fitted to the outside diameter of the coupling in place of the screw plug. The operating temperature of the thermal circuit-breaker must be lower than that of the fuse screw.

## 2. Operation

The thermal circuit-breaking equipment consists of the thermal circuit-breaker and the switching equipment.

The thermal circuit-breaker is fitted to the outside diameter of the coupling housing in the coupling. Inside the switch is an actuating pin soldered into a fusible cartridge. If the melting temperature (110 °C or 140 °C) of the cartridge is exceeded, the actuating pin is released from the fusible cartridge, is pushed approx. 10 mm out of the carrier housing by centrifugal force and, as the coupling rotates, actuates the switching device with its now projecting end.

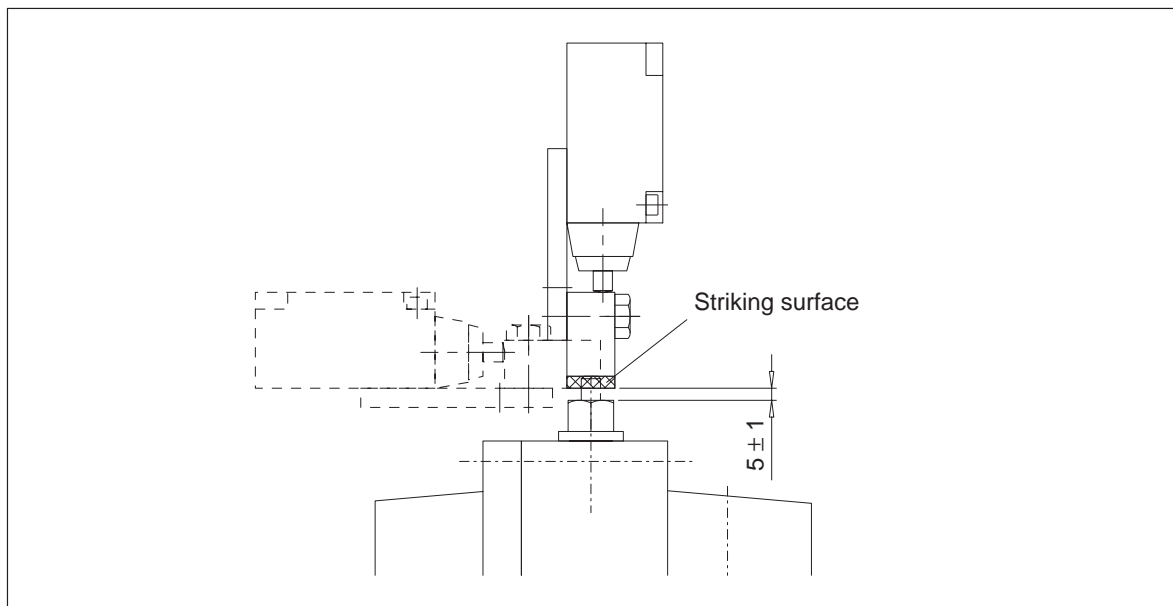
**Caution!**

The thermal circuit-breaking equipment does not function if the machine side is blocked and the coupling housing is connected to this side. If the coupling housing is stationary, the actuating pin cannot actuate the switching equipment.

The switching device comprises a momentary-contact limit switch with an open and close contact and a rotatable cam. The momentary-contact limit switch and the cam are mounted on a common base plate. If the actuating pin strikes the cam and turns this through 90°, the cam actuates the momentary-contact limit switch. The momentary-contact limit switches can trigger a fault signal and/or trip the drive cut-out.

If the thermal circuit-breaking equipment has operated, the operating fault must first be rectified. The thermal circuit-breaker must be replaced with a replacement circuit-breaker with a new sealing ring (tightening torque  $T_A = 75 \text{ Nm}$ ). The cam must be reset to its normal position and the gap ( $5 \pm 1 \text{ mm}$ ) between the thermal circuit-breaker and the cam checked.

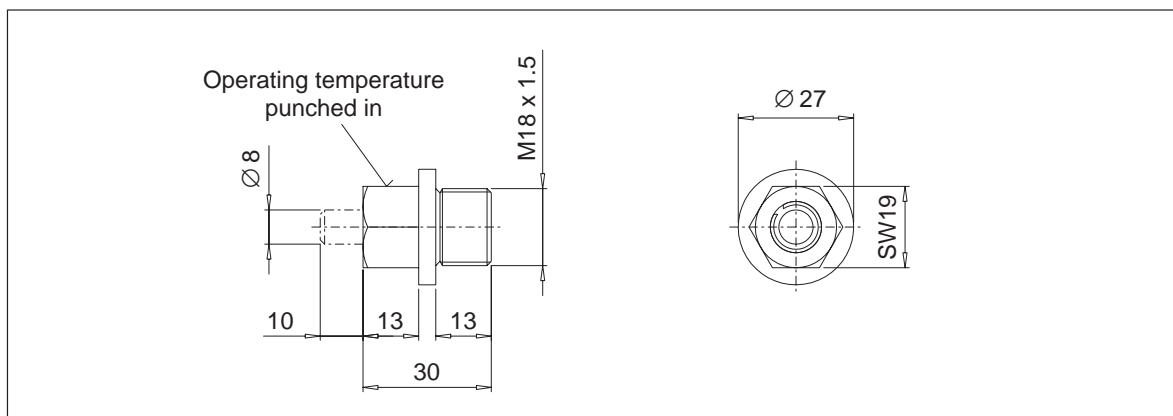
## 3. Assembly



The switching equipment is positioned with its cam radially even with the rotating circle of the thermal circuit-breaker so that there is a gap of  $5 \pm 1$  mm between the end faces of the cam and the thermal circuit-breaker. It must be ensured that the thermal circuit-breaker pin protruding 10 mm max. strikes the striking surface of the cam. The switching equipment must be mounted vibration-free on a fixed bracket or part of the base frame.

## 4. Component description

### 4.1 Thermal circuit-breaker



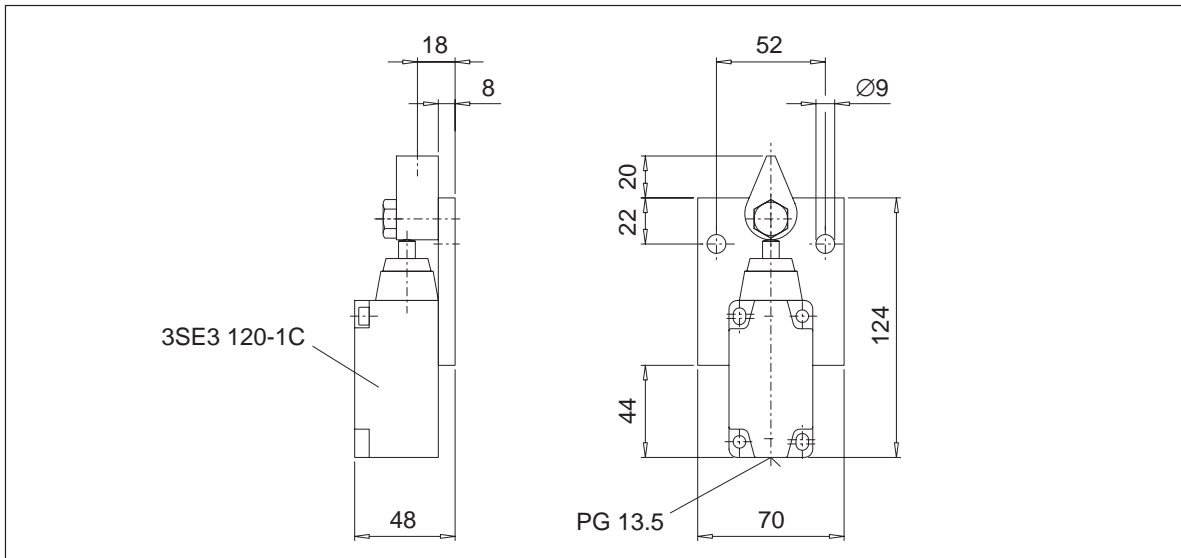
The thermal circuit-breaker consists of an aluminium housing with an M18x1.5 screw-in thread, inside which an actuating pin is soldered flush with the end face. If the coupling heats up and the melting point of the solder is reached, the solder melts and the actuating pin is pushed 10 mm out of the switch housing by the centrifugal force of the rotating coupling.

There are thermal circuit-breakers with an operating temperature of 110 °C (associated fuse screw 140 °C) and with an operating temperature of 140 °C (associated fuse screw 160 °C).

The tightening torque for fitting the thermal circuit-breaker is  $T_A = 75$  Nm.

## 4.2 Switching equipment

The switching equipment is screwed to a bracket or part of the machine frame through the dia. 9 holes in the base plate. The electrical connection is effected via the connection hole on the rear end face of the switch.



**Limit switch: 3SE3 120-1C**

### Technical data:

Rated isolation voltage $U_i$	500 V
Rated operating voltage $U_e$	500 V
Thermal rated current $I_{th}$	10 A
Cable entry	PG 13.5
Ambient temperature	- 40 °C to + 85 °C
Type of protection	IP67
Terminal cross-section	max. 2 x 2.5 <sup>2</sup> single wire max. 2 x 1.5 <sup>2</sup> fine wire with multi-core cable end
Mounting position	any

