

OPERATING INSTRUCTIONS TIRE TREAD HEATING SYSTEM FOR ABACUS MULTYWHEEL ROLLERS

1. Functional Characteristics

An Abacus tire tread heating system type W-IF consists of all-metal gas-fired infrared heaters type AMTB mounted in a tough stainless steel frame.

A gas-air-mixture combusts on a lattice meshing of various stainless steel screens and makes them glow. The resulting formation of infrared radiation heats the tires quickly and lossfree. This avoids surfacing material sticking to the tire tread.

The frame of the heating system is so mounted to the chassis of the roller that the distance between heating system and tire tread is approx. 90 mm (3,5 inch). The width of the heater frame is adjusted to the roller width.

A safety traction control automatically switches the heating system on when the vehicle is in motion, and switches it off when the vehicle stops.

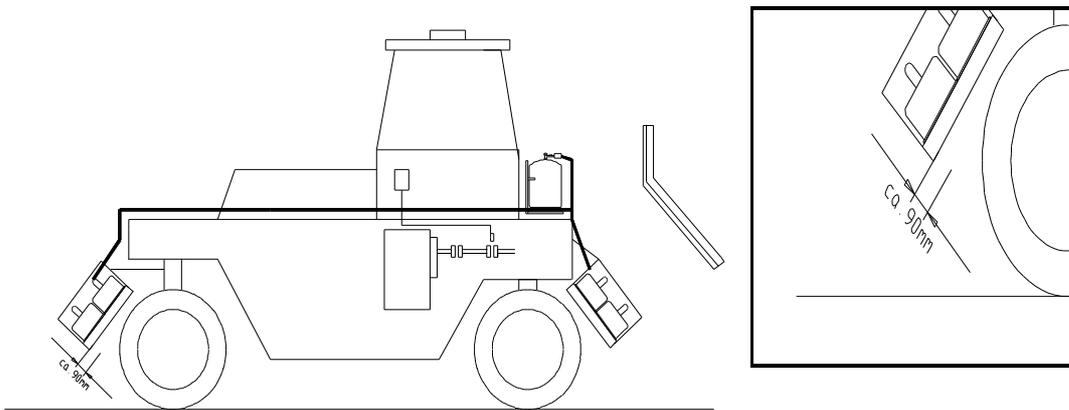
The gas is supplied from commercial available gas storage cylinders. Several gas storage cylinders are connected via multiple cylinder connectors to a cylinder group. The radiant heaters are ignited via thermally controlled pilot burners.

The radiant heaters are switched on resp. off by a solenoid valve. The power is supplied via the power supply system of the roller.

2. Installation

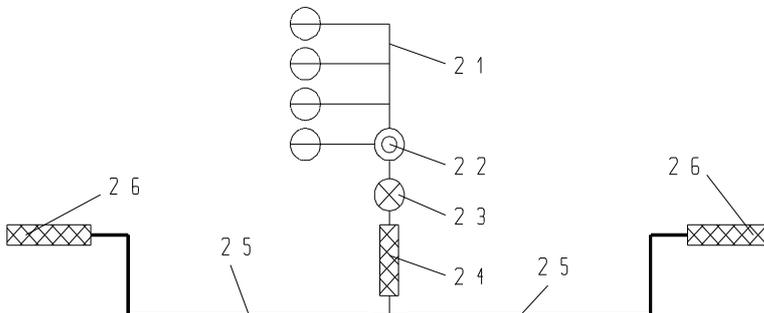
2.1 Heater Frame

The heater frames are mounted to the chassis of the roller using L-bars 60/60/6 (mm). The mounting has to be made to ensure that the distance between the surface of the radiant heaters and the tire tread is approx. 90mm(3,5 inch) (Fig.1)



2.2 Gas Supply

The gas storage cylinders (2 or 4 pcs.) shall be mounted on the roller horizontally, and guarded against upsetting by framing. The gas distribution goes from the gas cylinders through a multiple cylinder connector (2.1) via a flexible corrugated metal tube (2.4) to the fixed tubing (2.5) on the roller. Between the flexible corrugated metal tube (2.4) and the 11-step regulator (2.2) of the multiple cylinder connector a quick-acting stop valve (2.3) shall be installed. For tubing material Ermeto tubes with a diameter of 12mm shall be used. The connection from the fixed tubing to the heating frame is by a flexible corrugated metal tube (2.6).



2.3 Installation of the Traction Controller

The traction controller is diagrammatically illustrated in Fig.3. It consists of the control box A300 (3.1), an actuator (= Pulse switch) (3.2) and the control line (3.3) to the solenoid valves (3.4).

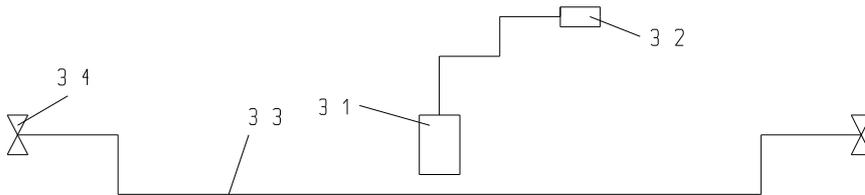


Fig.3

The control box A300 (Fig.4) shall be installed in the control cab. Power supply is via connection 4.8 to the ignition lock of the roller. The control line (two-wire: 2 x 0,75 mm²) to the solenoid valves is fitted to the terminal connection 4.5 of the control box. The actuator (see below for installation) shall be connected via the plug connector 4.4 with the control box.

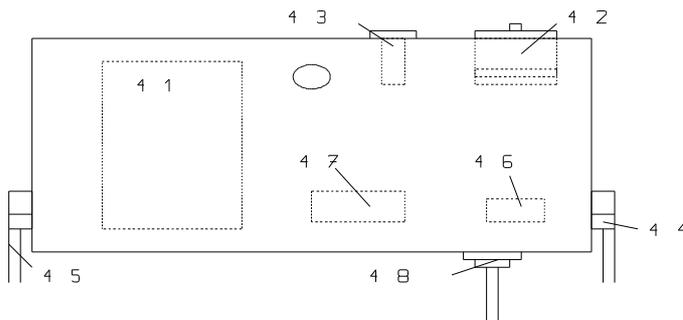
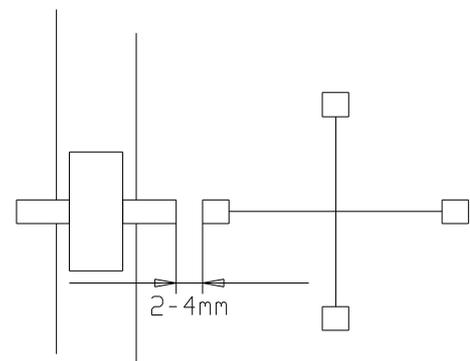


Fig.4

The actuator is mounted to the universal joint of the driven wheels. The actuator shall be fitted to a 450-500 mm (18-20 inch) L-bar using pipe clamps. The distance from the face of the actuator to the universal joint shall be 2-4mm (Fig.5).



3. Initial Operation

Prior the initial operation the complete installation has to be tested for leaks. After connection of the gas cylinders the initial operation is done as follows **(The given sequences of the individual items has to be kept to absolutely)**.

1. Open valves of **all** gas cylinders
2. Put step regulator to step 9-11
3. Ignite pilot burner :
 - Press pressure pin of safety pilot (in case of two pilot burners press the safety pilot of the gas supply pipe first)
 - Ignite pilot burner using a slow match wick
 - Release pressure pin **after approx. 10 sec.**
4. Connect switch 4.2 of the control box in the control cabin

The system is now ready for service. When the roller moves the radiant heaters will switch on automatically. The pilot light 4.3 will light up on the control box. When the wheels stop the radiant heaters will switch off automatically. The pilot burners will continue to burn.

To switch the system off close **all** cylinder valves first. Then close the quick-acting stop valve 2.3..