Fault code					Diagnostic code				
Code	Operating equipment		Fault description		Code	min.	max.	[ ]	Comment
510	K22	Relay for solenoid actuator for engine shut-down	Voltage above normal range or short circuit to (+) potential	X35:2	5003	0	28	V	
511	K22	Relay for solenoid actuator for engine shut-down	Voltage below normal range or short circuit to ground	X35:2	5003	0	28	V	
512	K22	Relay for solenoid actuator for engine shut-down	Current too low or interruption of power	X35:2	5003	0	28	V	
1001	Y04	Brake solenoid valve	Current too low or interruption of power	X35:45	1001	0	28	V	
1002	Y04	Brake solenoid valve	Voltage below normal range or short circuit to ground	X35:45	1001	0	28	V	
1003	Y04	Brake solenoid valve	Voltage above normal range or short circuit to (+) potential	X35:45	1001	0	28	V	
1011	H07	Warning buzzer	Voltage below normal range or short circuit to ground	X35:3					
1012	H07	Warning buzzer	Voltage above normal range or short circuit to (+) potential	X35:3					
1016	H14	Warning buzzer for backward travel	Voltage below normal range or short circuit to ground	X35:51					
1017	H14	Warning buzzer for backward travel	Voltage above normal range or short circuit to (+) potential	X35:51					
1020	R07	Potentiometer for speed control	Voltage below normal range or short circuit to ground	X35:9	1012	600	7500	mV	

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NOTICE!

To stop the machine during the adjustment process:

– Return the travel lever to "Neutral" or
– press the Emergency Stop button or
– switch the ignition off.

NOTICE!

Calibration must only be made at **operating temperature** of the machine.

Input code

NOTICE!

Observe the “Input codes display general” section!
„*Operation*“ *on page 118*

In order to be able to perform the "Automatic calibration of travel currents" correctly, the following actions must be carried out:

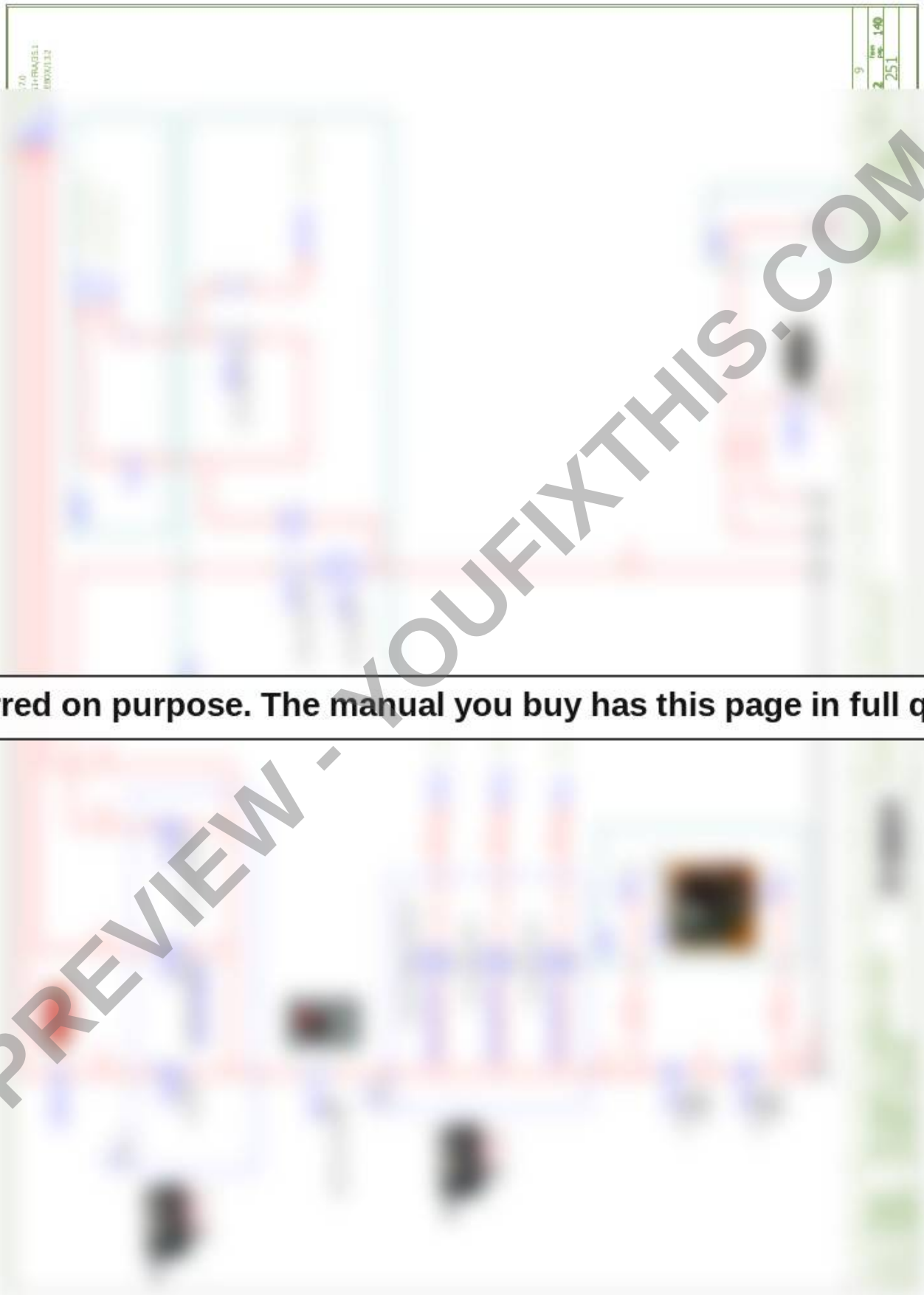
- Start the diesel engine
- Turn the rotary switch for "ECO mode" to "ECO"
- Set the rotary button for “Working speed” between *„1“* and *„2“*.
- Travel speed range switch to "slow" (turtle)
- Move the travel lever to “Forward travel” and drive the machine for approx. 5 metres
- Shift the travel lever to "Neutral" position.

Calibrating the travel currents:

Action	Result
■ Enter code *„0001“*.	■ The system changes to service mode. ■ The display shows a tool symbol.
■ Enter code *„1090“*.	■ The teach function “Automatic calibration of travel currents” is activated. ■ The display shows *„0000“*. The left *„0“* flashes.
■ Enter code *„1091“*.	■ The “Calibration of traction current left” function is activated. ■ The display shows *„FORE“*.

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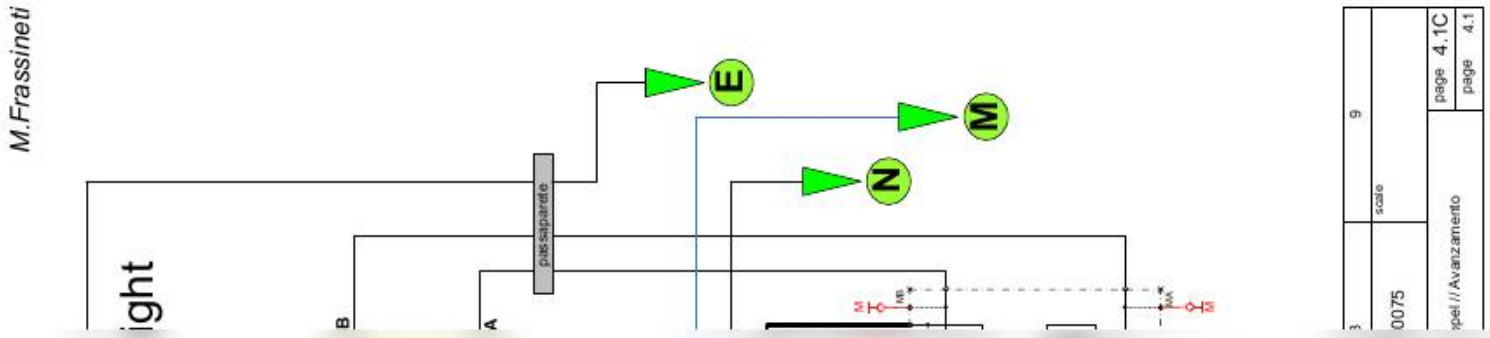
Wiring diagram 251



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Overview of switches in screed control panel

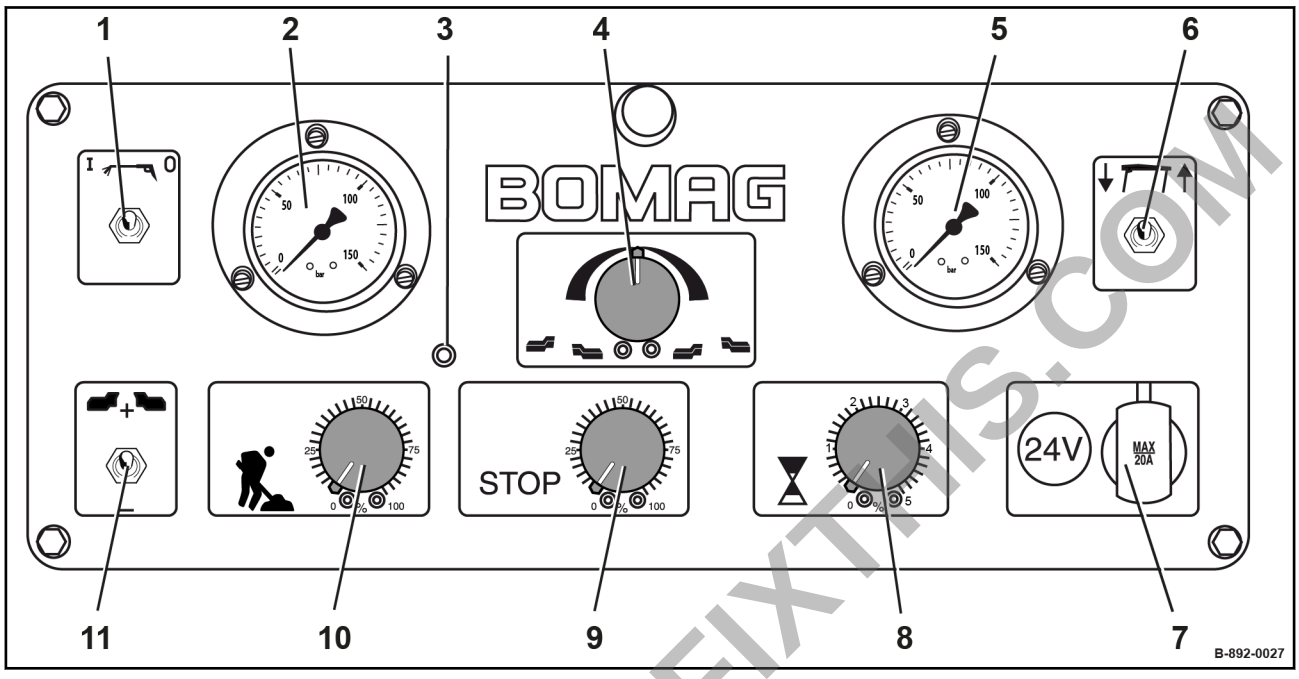


Fig. 16

1 ***S251*** Toggle switch for cleaning system
2 Pressure gauge for relief pressure
3 ***H124*** Control lamp, screed relieved
4 ***R123*** Potentiometer for screed relief right/left distribution *(optional equipment)*
5 Pressure gauge for relief pressure *(optional equipment)*
6 ***S296*** Toggle button for protective roof *(optional equipment)*
7 24 V Universal socket
8 ***R102*** Potentiometer for timer
9 ***R101*** Potentiometer for screed relief - machine stopped
10 ***R100*** Potentiometer for screed relief - machine in motion
11 ***S258*** Toggle button for crown adjustment *(optional equipment)*

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Fault code					Diagnostic code				
Code	Operating equipment		Fault description		Code	min.	max.	[ ]	Comment
1021	R07	Potentiometer for speed control	Voltage above normal range or short circuit to (+) potential	X35:9	1012	600	7500	mV	
1022	R07	Potentiometer for speed control	Malfunctioning device or component	-					
1025	R07	Potentiometer for speed control	Voltage below normal range or short circuit to ground	X35:8	1010	600	7500	mV	
1026	R07	Potentiometer for speed control	Voltage above normal range or short circuit to (+) potential	X35:8	1010	600	7500	mV	
1031	B109	Rotary speed sensor motor for wheel/ track rear left	Frequency, pulse width or period duration not normal	X35:34	1042	0	100	m/min	
1032	B110	Rotary speed sensor for wheel motor/ track+D908, rear right	Frequency, pulse width or period duration not normal	X35:35	1043	0	100	m/min	
1033	B56	Cross-slope sensor	Current too low or interruption of power	X71:12	1004	4	205	mA	
1034	B56	Cross-slope sensor	Current too low or short circuit to ground	X71:12	1004	4	205	mA	
1050	S221	Travel lever	Data changes erratically or incorrectly	X35:14, X35:15, X35:16	1029	0	1111	without	1xxxx = switch forward, x11x = switch neutral, xxxx1 = switch reverse
1051	S04	Switch for brake	Data changes erratically or incorrectly	X35:40, X35:41	1032	0	1	without	0 = brake request not active, 1 = brake request active

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Fault code					Diagnostic code				
Code	Operating equipment		Fault description		Code	min.	max.	[ ]	Comment
9111	A81	Display unit	Updating rate not normal	-					
9145	A122	Control unit, material flow (MCU)	Updating rate not normal	-					
9147	A121	Screed control (SCU)	Updating rate not normal	-					
9150	A80	Module data collector	Updating rate not normal	-					
9400	A48	Electronic engine control unit	Updating rate not normal	-					

4.3.3 Fault Rectification

Description of fault	Possible cause(s)	Remedy
Data valid, but above normal operating range - severe infringement of range	Upper range limit exceeded	Create conditions to be able to comply with the top range limit
	-	-
	Actuator, input unit or sensor faulty	Replace actuator, input unit or sensor
Data valid, but below normal operating range - severe infringement of range	Bottom range limit fallen short of	Create conditions to be able to comply with the bottom range limit
	-	-
	Actuator, input unit or sensor faulty	Replace actuator, input unit or sensor
Data change erratically or incorrectly	Poor electrical connection in wiring loom, plug or central electrics	Repair wiring loom/plug
	No voltage supply	Check / correct settings
	Actuator, input unit or sensor faulty	Replace actuator, input unit or sensor
Voltage above normal range or short circuit to (+) potential	Poor electrical connection in wiring loom, plug or central electrics	Repair wiring loom/plug
	No ground connection	-
	Actuator, input unit or sensor faulty	Replace actuator, input unit or sensor

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Action	Result
■ Switch on tamping and adjust **30 Hz** in the display. ■ With the help of a digital speed tester (BOMAG part no.: 079 948 98) determine the speed of the tamper shaft.	
■ Enter code *„3122“*	■ The display shows the current mA-value in accordance with the measured speed.
If the shaft speed is **lower** than 1800 rpm: ■ Press key *[F1]*.	■ Both the mA-value and the shaft speed will increase, as long as button *„F1“* is pressed.
If the shaft speed is **higher** than 1800 rpm: ■ Press key *[F2]*.	■ Both the mA-value and the shaft speed will increase, as long as button *„F2“* is pressed.
Once the shaft speed reaches 1800 rpm: ■ Press button *[F1]* and button *[F2]* together.	■ The display shows *„0 0 0 0“*
■ Enter code *„3123“*.	■ The adjusted mA-value is saved. ■ The display shows the actual mA value. ■ The display shows "D O N E" ■ The display shows "0 0 0 0"
■ Enter code *„5612“*.	■ The engine speed is set to normal working mode.
■ Enter code *„0000“*.	■ This quits service mode.

5.3.3.4 Changing the tamper start and stop ramp

Foreword

"Start ramps" or "ramps" designate the characteristics course of the control of a variable displacement pump. In this context one refers to "Start ramps" (1), (2) and "Stop ramps" (4), (5). A "steeper" ramp (1) makes sure that the maximum tamper speed (3) is reached quicker, a "more flat" ramp (2) allows the tamper to start up much slower.

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6.5 Exhaust gas cleaning

Why exhaust gas cleaning?

The combustion of fuels in diesel engines results in the creation of nitrogen oxides (NO_x) on the one hand, and soot particles on the other. Both are not actually desired as exhaust fume constituents and are therefore filtered out of the exhaust gas with the help of various systems, or by chemical processes respectively.

6.5.1 Exhaust gas recirculation

Description

Exhaust gas recirculation (EGR) is required to reduce the nitrogen oxide emission. In diesel engines the EGR is one of the most important measures for reducing the nitrogen oxide emissions.

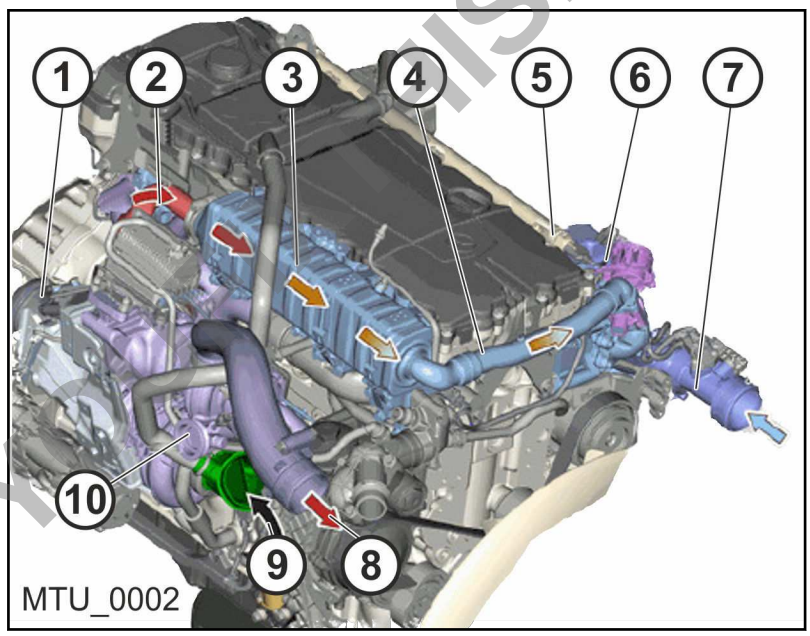


Fig. 63: EGR MTU 4R/6R 1000

1 Exhaust pipe
2 Exhaust line
3 Exhaust gas recirculation cooler
4 Exhaust gas recirculation line (cold)
5 Mixer housing
6 Exhaust gas recirculation actuator
7 Charge air pipe
8 Charge air from intercooler (hot)
9 Charge air from intercooler (cold)
10 Exhaust turbo charger

The illustration shows the engine 6R 1000. The exhaust gas recirculation system is generally identical for the 4 and the 6 cylinder engine.

Function

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8.2.5 Side plates

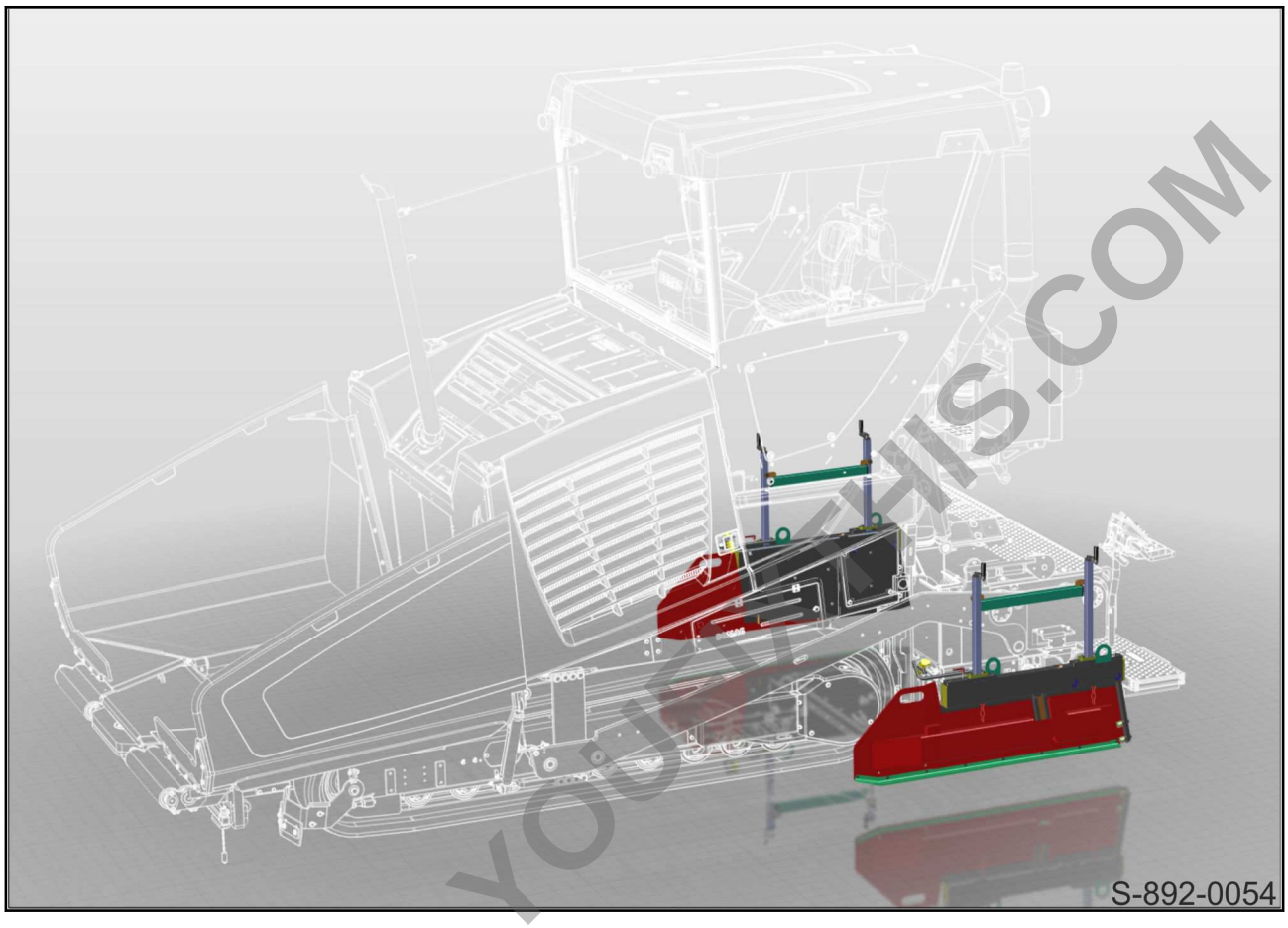


Fig. 91

- The side plates are mounted at the left and right side of the screed.
- These side plates make sure that no material can escape to the outside.
- As an option, the paver may be equipped with a heating rod that heats the side plate. This prevents sticking of cooled down material to the plates.
- An optional ultrasonic sensor can be mounted on the front of the side plates. It controls the material supply to the auger.

8.2.6 Inspection and maintenance work

8.2.6.1 Material transport

No.	Maintenance works	Page
	Every 250 operating hours	
8.2.6.2.1	*Servicing the scraper belt*	*211*

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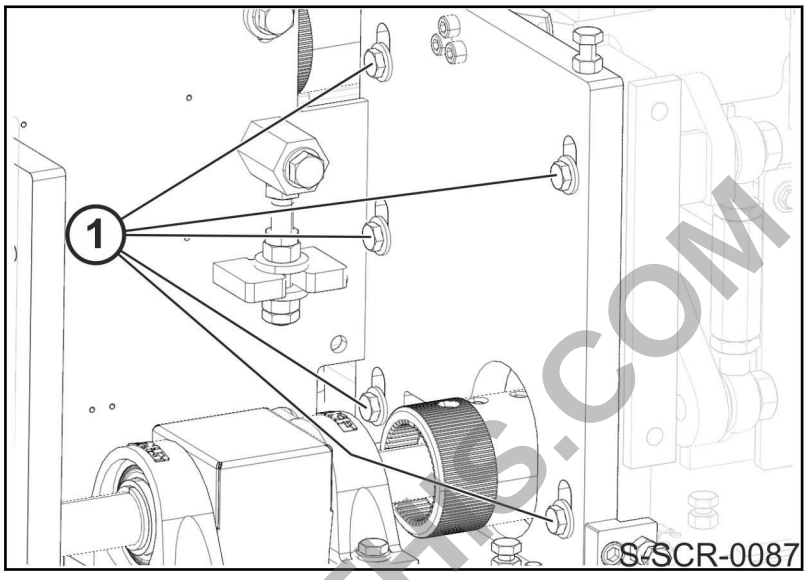


Fig. 145

6. Once all nominal values are correct, tighten the fastening screws ↳ Fig. 145 of the attachment parts.

Setting the angle of attack

General

The paving thickness can be adjusted by changing the angle of attack of the screed. The term angle of attack describes the angle of the screed with respect to the level surface. If the screed is tilted up at the front one speaks of a positive angle of attack, if the screed is tilted down at the front, one speaks of a negative angle of attack. A negative angle of attack should be strictly avoided, because this would lead to poor paving results.

The following applies:

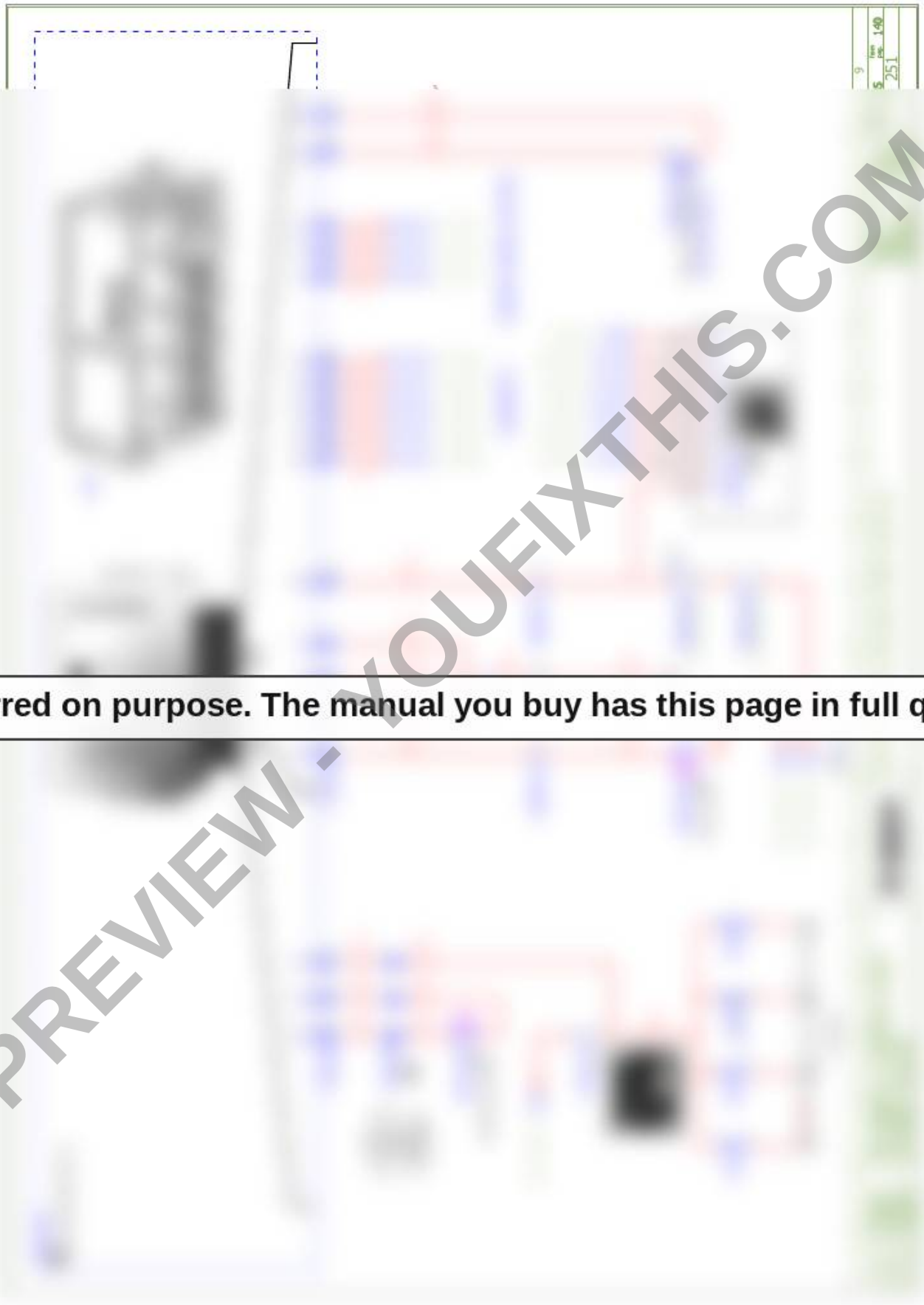
- The higher the intended paving thickness, the bigger the required angle of attack.
- The lower the intended paving thickness, the smaller the required angle of attack.
- The angle of attack must not be less than "0", since this would lead to a poor paving result.

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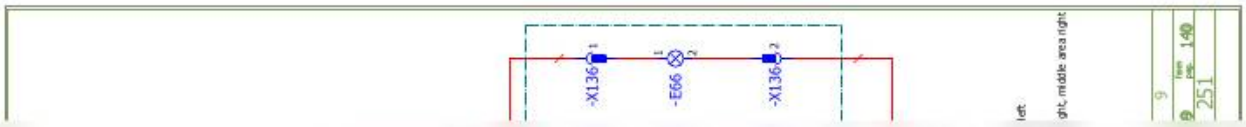
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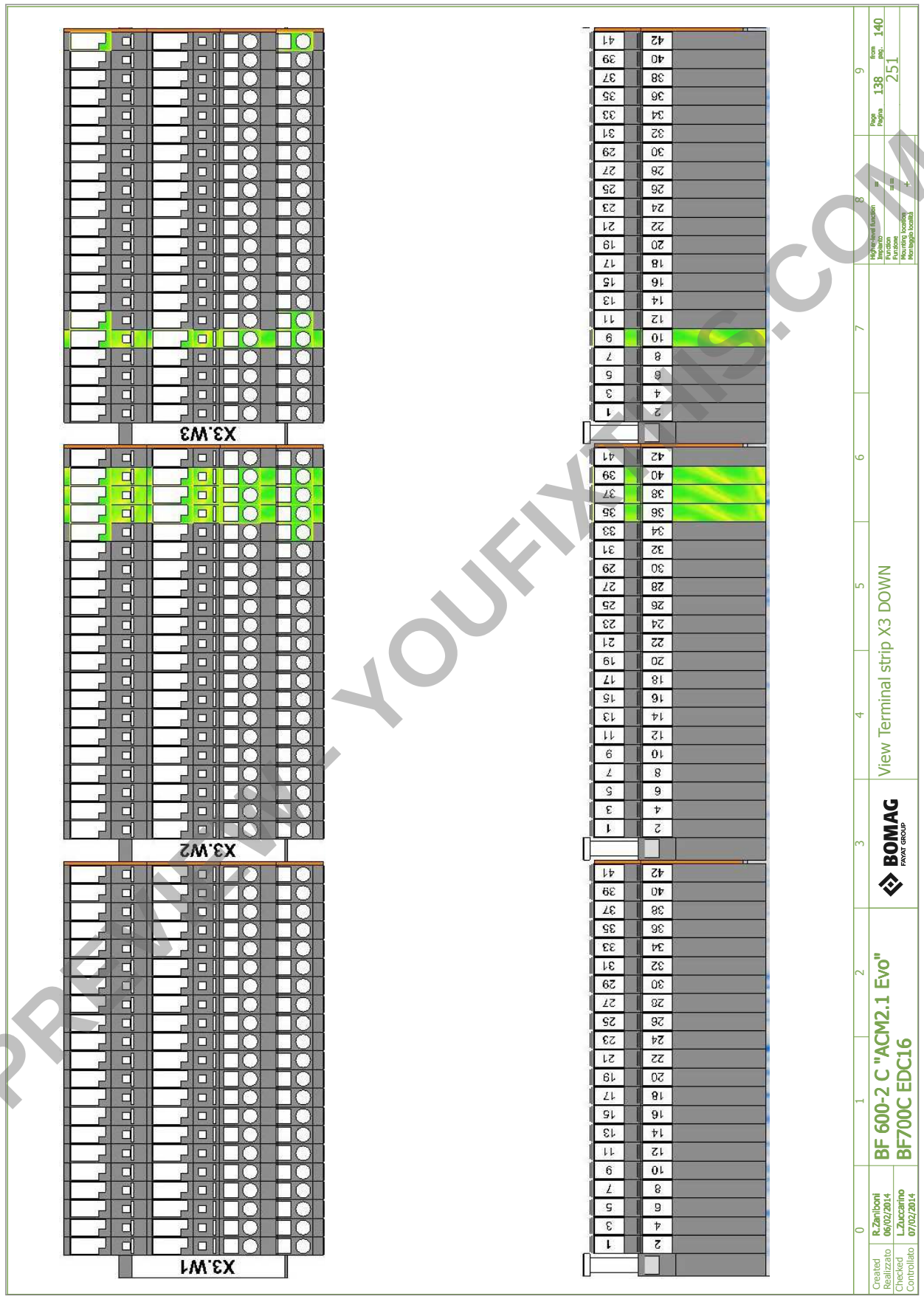
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