Maintenance table

Maintenance work	Remark	Running-in instructions after 250 operating hours	every 10 operating hours, daily	every 250 operating hours	every 500 operating hours	every 1000 operating hours	every 2000 operating hours	every 3000 operating hours	as required
Check the engine oil level	Dipstick mark		X						
Check the water separator			X						
Check the fuel level			X						
Check the hydraulic oil level	Inspection glass		X						
Check the coolant level	Inspection glass		X						
Check the dust separator			X						
Check the tire pressure				X					
Clean the cooling fins on engine and hydraulic oil cooler				X					
Check the oil level in the drive axle				X					
Check the oil level in the wheel hubs				X					
Check the oil level in the axle reduction gear				X					
Check the oil level in the drum reduction gear				X					
Check the oil level in the vibration bearings				X					
Change engine oil and oil filter cartridge	min. 1x per year	X			X				
Change the fuel filter cartridge					X				
Drain the sludge from the fuel tank					X				
Service the battery	Pole grease				X				
Change the fuel pre-filter cartridge					X				

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Fig. 8:

2. Remove the engine solenoid

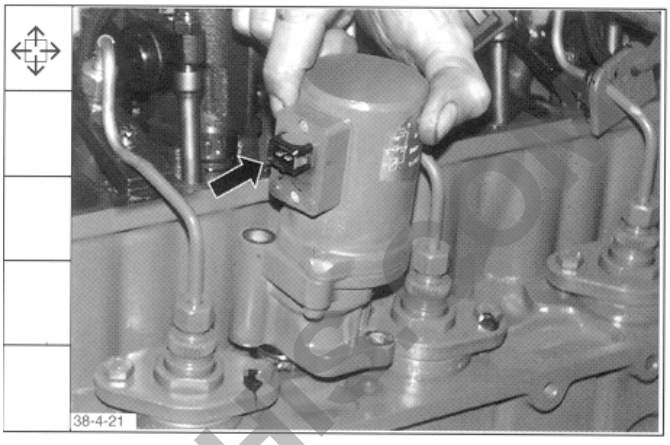


Fig. 9:

3. Insert the pressing device, WILBÄR No. 100 830 carefully into the groove in the governor rod and tighten.

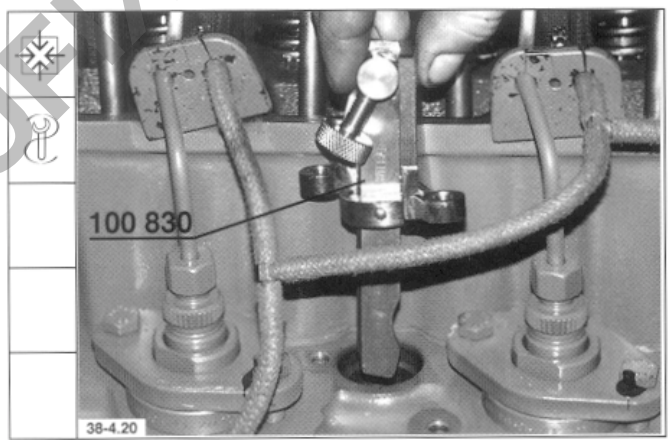


Fig. 10:

4. Turn the knurled fastening screw to press the governor rod to stop position.

Note:

Tighten the knurled fastening screw by hand.

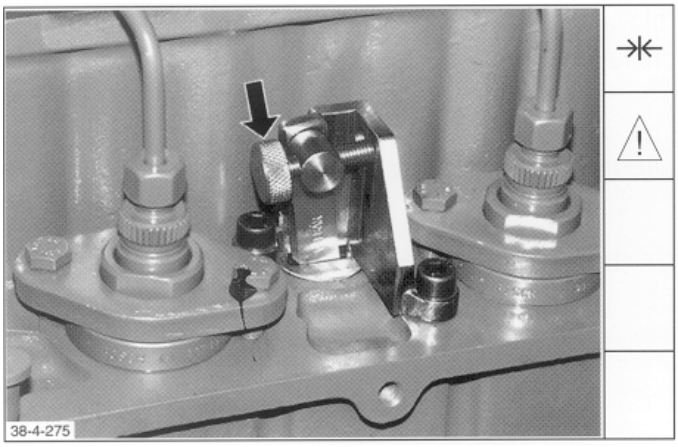


Fig. 11:

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Travel circuit

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BOMAG GMBH BOPPARD

Gez.: 01.03.2004
Name: Sels
Gepr.: 01.03.2004
Name: Werner

Bauteilliste
component listing

Ers.f.:
Replaces:

Seite: 1 von: 6
page: from:

Blatt Nr.: 582 700 96
sheet no.: 101

Name	Bl.	Pf.	Benennung	title	TYP
A02	007	17	Blinkrelais	indicator relay	
A12	008	5	Radio	Radio	
A13	003	3	Steuergeraet Heizung	Control unit, heating	
A15	004	16	Platine Ueberwachungsmodul	Printed circuit board, monitoring module	
A16	008	6	Elektronik Tachograph	Electronic system, tachograph	
A51	008	6	Platine Frequenzanzeige	Circuit board,frequenzy meter	
A68	005	10	Modul Sitzkontakt	Modul seat contact	MAX. 0,12A
A72	009	11	Steuergeraet Klimaanlage, Heizung	Control unit,air conditioning,heating	
A83	006	6	Elektronik Messtechnik	electronic measurement−equipment	
B03	004	15	Unterdruckschalter Luftfilter	Vacuum switch, air cleaner	
B06	004	17	Druckschalter Motoroel	Pressure switch, engine oil	
B11	003	9	Signalhorn	Warning horn	MAX.5A
B11	003	11	Signalhorn	Warning horn	MAX.5A
B13	004	2	Naeherungsinitiator Fahrhebel links	Proximity switch, travel lever, lh.	
B14	004	6	Naeherungsinitiator Fahrhebel rechts	Proximity switch, travel lever, rh.	
B21	004	14	Differenzdruckschalter Hydr.−Oelfilter	Pressure diff. switch, hydr. oil filter	
B30	004	16	Temperaturschalter Motoroel	Temperature switch, engine oil	
B51	008	4	Lautsprecher Radio	Speaker radio	
B51	008	6	Lautsprecher Radio	Speaker radio	
B55	004	17	Kuehlmittelstand Ausgleichsbehaelter	Coolant charge expansion tank	
B57	003	15	Neigungssensor Stufenumschaltung	Slope sensor, speed range selection	
B60	003	14	Aufnehmer Achsgeschwindigkeit	Sensor, axle speed	
B61	006	12	Aufnehmer Verstellzylinder	Sensor, ajustable zylinder	
B62	006	8	Beschleunigungsaufnehmer	Acceleration sensor	
B62	006	10	Beschleunigungsaufnehmer	Acceleration sensor	
B103	009	7	Temperaturschalter Klimaanlage	Temperature switch, air conditioning	
B104	009	7	Druckschalter Klimaanlage	Pressure switch, air conditioning	
B113	003	3	EMR Temperaturgeber Kuehlmittel	EMR Temperature switch, collant	
B124	004	19	Geber Wasserstandsabscheider Diesel	Sender, water separator fuel	
B131	009	10	Temperaturschalter Heizung	Temperature switch, heating	
E08	007	17	Blinkleuchte vorne links	Indicator, front, lh.	MAX. 1,75A
E09	007	18	Blinkleuchte hinten links	Indicator, rear, lh.	MAX. 1,75A
E10	007	19	Blinkleuchte vorne rechts	Indicator, front, rh.	MAX. 1,75A
E11	007	19	Blinkleuchte hinten rechts	Indicator, rear, rh.	MAX. 1,75A
E12	007	7	Parkleuchte links	Parking light, lh.	MAX. 0,42A
E13	007	6	Schlussleuchte links	Tail light, lh.	MAX. 0,42A
E14	007	7	Parkleuchte rechts	Parking light, rh.	MAX. 0,42A
E15	007	8	Schlussleuchte rechts	Tail light, rh.	MAX. 0,42A
E16	007	2	Scheinwerfer links	Head light, lh.	MAX. 4,6A
E17	007	2	Scheinwerfer rechts	Head light, rh.	MAX. 4,6A
E23	007	11	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	MAX. 4,6A
E23	008	18	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	4,6A
E25	007	12	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	MAX. 4,6A
E25	008	19	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	4,6A
E27	007	10	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	MAX. 4,6A
E27	008	17	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	4,6A
E28	007	11	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	MAX. 4,6A
E28	008	17	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	4,6A
E29	008	3	Innenleuchte Kabine	Inside light, cabin	1,75A
E30	009	13	Heizgeraet	Heating unit	
E32	008	19	Kennleuchte	Warning light	5A
E70	008	15	Nachtleuchte	Night lamp	0,83A
E71	008	3	Kontrolleuchte Schalter Heckscheibenheizung	indicator light switch rear screen	1,75A
E72	008	16	Beleuchtung Bedienschalter	illum. Switches	
F00	002	4	Hauptsicherung Batterie	Fuse, main, battery	125A
F03	005	18	Sicherung Vibration	Fuse, vibration	MAX. 1,23A
F07	007	15	Sicherung Warnblinker	Fuse, hazard light	15A
F08	007	18	Sicherung Blinker u. Arbeitsscheinw.	Fuse, indicators a. work. head light	15A
F09	007	6	Sicherung Park− u. Schlussl. links	Fuse, parking and tail light, lh.	10A
F10	007	8	Sicherung Park− u. Schlussl. rechts	Fuse, parking and tail light, rh.	10A
F11	007	2	Sicherung Scheinwerfer links	Fuse, head light, lh.	15A
F13	002	10	Sicherung Startschalter	Fuse, starter switch	30A
F14	002	18	Sicherung Hubmagnet Motor	Fuse, shut off solenoid, engine	15A
F15	009	18	Sicherung Heizgeraet	Fuse, heating unit	
F18	007	5	Vorsicherung Arbeitsscheinw. vorne	Primary fuse, work. head light, fr.	30A
F19	007	12	Sicherung Arbeitsscheinw. vorne li.	Fuse, working head light, front, lh.	30A
F22	007	10	Sicherung Arbeitsscheinwerfer hinten	Fuse, working head lights, rear	30A
F23	003	9	Sicherung Signalhorn	Fuse, warning horn	10A
F24	004	10	Sicherung Ueberwachungsmodul	Fuse, monitoring module	10A
F25	004	2	Sicherung Magnetv. Fahren u. Bremse	Fuse, sol. valve, travel and brake	10A
F31	009	3	Sicherung Kabinenluefter	Fuse, cabin ventilator	
F39	002	19	Hauptsicherung Kabine	Main fuse, cab	15A
F40	009	13	Sicherung Kabinenheizung	Fuse, heating unit cab	
F41	008	19	Sicherung Rundumkennleuchte	Fuse, rotary beacon	
F42	008	3	Sicherung Kabineninnenleuchte	Fuse, inside light cab	
F43	008	10	Sicherung Wischermotor hinten	Fuse, wipermotor rear	
F44	008	13	Sicherung Wischermotor vorn	Fuse, wipermotor front	
F48	002	3	Sicherung Gluehanlage	Fuse, glow plug system	125A
FM4	006	11	Platinensicherung	Multifuse	
F105	002	16	Sicherung Motordrehzahl	Fuse, motor speed	20A
F130	008	15	Sicherung Nachtleuchte	Fuse, night lamp	
F143	008	2	Sicherung Heckscheibenheizung	fuse rear screen heating unit	
F144	008	20	Sicherung Kabinensteckdose	Fuse cabin−socket	
F146	006	4	Sicherung Steuerung MESX (Potential 30)	Fuse Controller (Pot. 30)	
F148	006	2	Sicherung Steuerung MESX (Potential 15)	Fuse Controller (Pot. 15)	
G01	002	3	Batterie	Battery	103A
G02	002	5	Generator	Generator	
G03	002	4	Batterie	Battery	103A
H06	007	15	Meldeleuchte Warnblinker	Indicator light, hazard light	
H07	004	10	Warnsummer Betriebsstoerung	Warning buzzer, breakdown	MAX. 0,12A
H14	004	8	Warnsummer Rueckwaertsfahrt	Back−up alarm buzzer	MAX. 0,12A
K04	005	18	Schrittrelais Vibration	Toggle relay, vibration	MAX. 1,23A
K05	004	3	Relais Startstrom	Relay, starting current	BOSCHW

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Foreword

Reliable construction equipment is of greatest advantage for all parties involved:

- for the customer/user it is a basis for an exact calculation of utilization periods and the completion of projects as scheduled.
- in the rental business it means that the equipment can be reliably used and planned without having to stock a large number of stand-by machines.
- for the manufacturer it means that customers are satisfied, provides him with a good image and gives him a feeling of confidence.

It is BOMAG's philosophy to design and produce the machines with highest possible reliability. This aspect of simple and easy maintenance was one of the key issues when developing and designing the machine:

- the location of components in the machine eases maintenance work,
- the high quality standard of BOMAG is the basis for the considerable extension of the service and maintenance intervals.
- the After Sales Service of BOMAG, including excellent operating and maintenance instruction manuals, high quality training courses and on-site machine demonstrations helps the customer to maintain their machines in good condition over a long period of time.

Permanent training of BOMAG's own service personnel as well as the service personnel of BOMAG Profit Centres and dealers is therefore a general prerequisite for BOMAG's excellent world-wide service.

This program of permanent training is only possible with appropriate and up-to-date training material for trainers as well as persons attending the training courses.

This training manual has not only been written as a support for the professional work of the trainer, but also for the trainees attending these training courses.

The different levels of product training demand, that the training performed by BOMAG, its Profit Centres or its dealers reflects the high quality of the training conducted at the Training Centre at BOMAG in Boppard. For this reason we invested a lot of time in the preparation of these materials .

The structure of this training manual enables us to change or up-date individual chapters in case of alterations to the machine.

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Legend:

1a Fuel lift pump
1b Fuel pre-filter
1c Water separator
1d) Water proportion sensor
2 Feed to fuel lift pump
3 Fuel lift pump
*4 Connecting line lift pump – main filter (**fuel pre-pressure up to 10 bar**)*
*5 Main fuel filter (**pressure resistant**)*
6 Connecting line main filter – supply for injection pump
7 Single injection pump
8 High pressure line
9 Injection nozzle
10 Leakage line
11 Pressure retaining valve - 5 bar
12 Return flow to tank

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Auxiliary power take-off side



Pos.	Designation	Pos. in wiring diagram	Pos. in hydraulic diagram	Measuring values
1	Engine oil pressure switch	B 06		pressureless closed,
2	Engine solenoid, speed control	Y 120		
3	Engine shut-down solenoid	Y 58		
4	Fuel pre-filter with hand pump			
5	Fuel filter			
6	Engine oil filter			
	Water separator sensor, fuel	B 124		

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BW 211 / 213 D-4 Front drum drive motor: Radial piston motor MSE 18 2 CX

On single drum rollers of series BW 211 and 213 D-4 the drum is driven by a hydraulic radial piston motor.

These drum drive motors consist of three housing parts, the flat distributor, the cylinder block with the working pistons and the output shaft.

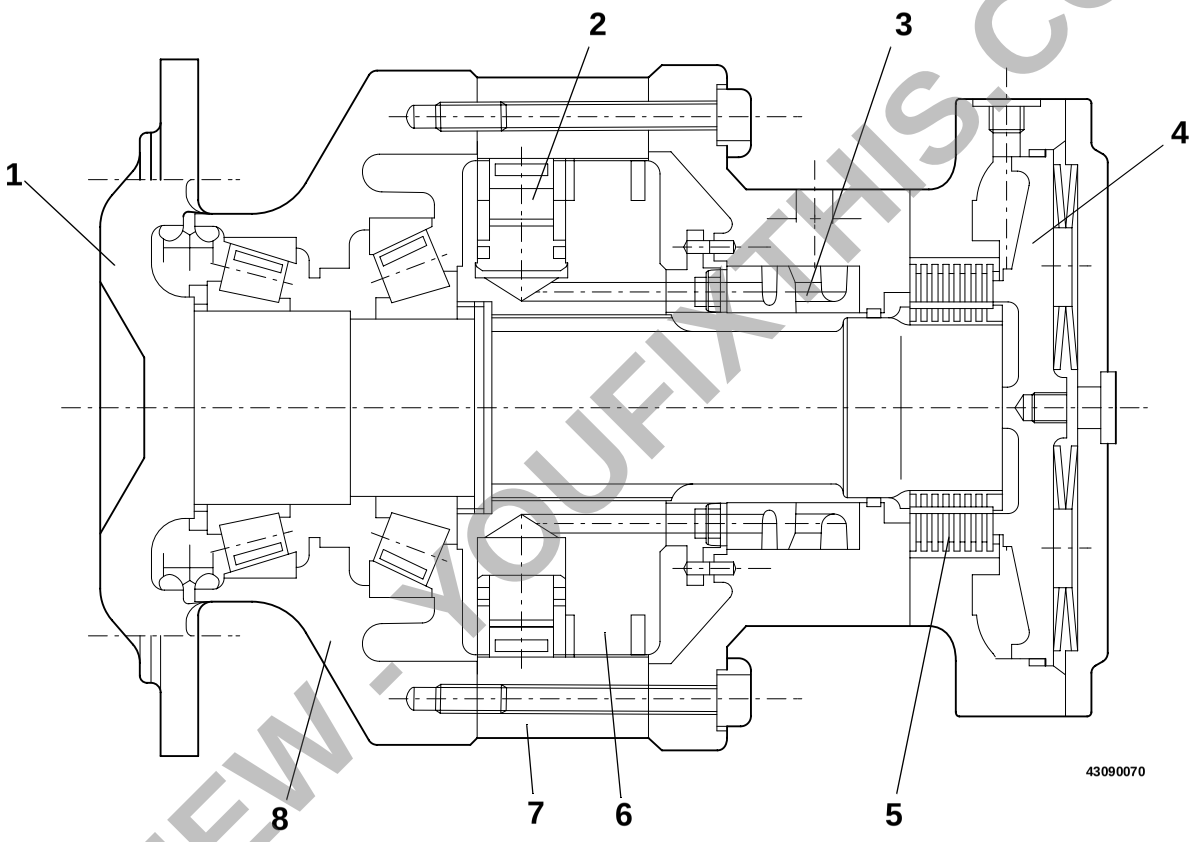


Fig. 15: Drum drive motor

1 Drive shaft with output flange
2 Piston with roller
3 Oil distributor
4 Brake piston
5 Multi-disc brake
6 Cylinder block
7 Cam ring
8 Bearing plate

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Function

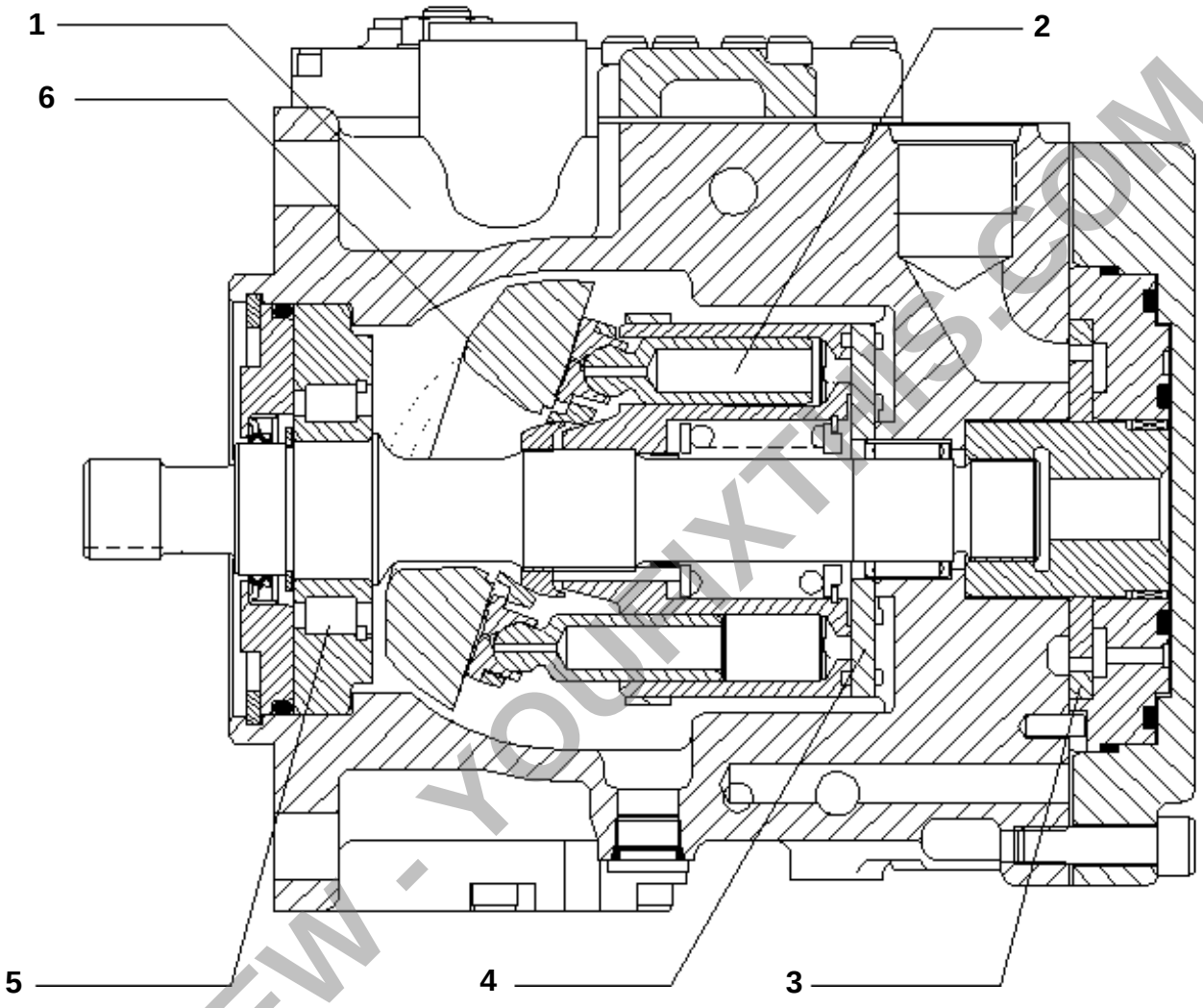


Fig. 4 Cross-section of vibration pump

1 Servo piston
2 Working pistons
3 Charge pump
4 Valve plate
5 Roller bearing
6 Swash plate

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Seat contact switch

Only machines with cabin are equipped with the seat contact circuitry.
This circuit also contains the vibration relay. Machines with ROPS or sun canopy are not equipped with the seat contact circuitry.

The following applies in general:
When the seat is not occupied it can be assumed that in the worst case the machine may perform uncontrolled movements. In such an instance the machine must be shut down at the latest after 4 seconds. During these 4 seconds the driver must be warned about this condition by the warning buzzer in the dashboard and the area around the machine by the backup alarm. To start travel movement of the machine the driver's seat must be occupied, as otherwise the diesel engine will be shut down immediately. This prevents the machine from being started from the outside (e.g. through the open window).

1. Starting of the engine should only be possible with the travel lever in position "Brake".

2. Driver standing (seat contact control light does not light up): While the engine is running shift the travel lever to travel operation --- then engine shut be shut down immediately, the seat contact light lights up, warning buzzer and backup alarm sound. If the travel lever is returned to "Brake" position during the shut-down process, the fuel solenoid is switched on again and the engine will automatically start. Otherwise the engine must be restarted.

3. Driver seated: (seat contact control light does not light up): Normal operation, no warning active. Driver gets up --- control light comes on and both warning buzzers sound. Driver sits down again within 4 seconds --- machine returns to normal operation. Driver **does not** sit down again within 4 s --- engine is shut down. If the driver sits down again while the engine is being shut down, the fuel solenoid is switched on again and the engine will automatically start. Otherwise the engine must be restarted.

In addition to the seat monitoring system all monitoring functions are implemented by the

Module UPM2

.

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