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Travel drive BW 141/151 AD

On the machines described in this training manual the travel system consists of a closed hydraulic



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TROUBLE SHOOTING TRAVEL SYSTEM
BW 141- 4-FAMILY

POSSIBLE CAUSES	SYMPTOMS	Machine does not travel (forward and reverse)	Machine travels to mone direction only	Machine moves with travel lever in 'Neutral'	Max. travel speed is not reached	Hydraulic oil overheating						
Brake valve (electrically/mechanically/hydraulically)		1										
Brake in drum drive travel gear (mechanically/hydraulically)		2			2	3						
Speed range selector switch position/defective/wiring					1							
Charge pump / charge pressure relief valve(s) dirty/defective		2			3							
Pump control (servo control)		2	1	2	3							
Pressure override / travel pump high pressure limitation dirty/out of adjustment/defective		3	2		3	3						
Travel cable adjustment				1	2							
Travel pump mechanical neutral position				3	3							
Travel pump(s) defective		3		3	2							
Control valve travel motor(s) (electrically/mechanically/hydraulically)					1	2						
Flushing valve for travel motor(s) stuck			3									
Travel motor(s) defective		3			3							
Drum drive travel gear defective		3										
Hydraulic oil cooler dirty (internally/externally)						1						
Thermostat (hydraulics) dirty/jammed/defective						2						
Coupling diesel engine- pumpe		2										
Diesel engine					1							

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BOMAG Central Service - Technical data and adjustment values

Status: 2005-06-22

Product type:	**BW 141 AD Serie 4**
Type No.:	930 00

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5.5 Maintenance chart

No.	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	every 5000 operating hours	as required
5.6	Check the engine oil level	Dipstick mark		X							
5.7	Check the water separator			X							
5.8	Check the fuel level			X							
5.9	Check the hydraulic oil level	Inspection glass		X							
5.10	Check the water level			X							
5.11	Clean the cooling fins on engine and hydraulic oil cooler				X						
5.12	Check the oil level in vibrator shaft tube				X						
5.13	Change the engine oil*	min. 1x per year				X					
5.14	Change the engine oil filter cartridge**	min. 1x per year				X					
5.15	Servicing the air conditioning*** (summer operation)					X					
5.16	Service the battery	Pole grease				X					
5.17	Change the fuel filter cartridge						X				
5.18	Change the fuel pre-filter cartridge						X				
5.19	Change the oil in the drum drive gear						X				
5.20	Check, tension, lubricate the steering chain						X				
5.21	Check the engine mounts						X				
5.22	Check, tension, replace the V-belt						X				

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Name:Kneip

Bauteilliste
component listing

Name	Bl.	Pf.	Benennung	title	TYP
A01	005	11	Intervallschalter	intervall switch	
A02	007	8	Blinkrelais	indicator relay	4/6X21 WATT
A02	019	1	Blinkrelais	indicator relay	
A03	005	10	Modul Vibration	modul, vibration	
A03	008	4	Modul Vibration	modul, vibration	
A03	019	11	Modul Vibration	modul, vibration	
A04	005	5	Modul Berieselung	modul, sprinkler system	
A04	019	5	Modul Berieselung	modul, sprinkler system	
A05	011	18	Elektronik Geschwindigkeitsanzeige	Electronic system, speedometer	
A05	018	13	Elektronik Geschwindigkeitsanzeige	Electronic system, speedometer	
A12	014	9	Radio	Radio	
A13	002	13	Steuergeraet Heizung	Control unit, heating	
A15	003	20	Ueberwachungsmodul	monitoring module	
A15	007	15	Ueberwachungsmodul	monitoring module	
A15	018	4	Ueberwachungsmodul	monitoring module	
A16	011	6	Elektronik Tachograph	Electronic system, tachograph	
A51	011	3	Platine Frequenzanzeige	Circuit board,frequenzy meter	
A66	017	9	Elektronik Steuereinheit	Electronic control unit	
A67	017	15	Eingabeeinheit	Keyboard	
A68	003	13	Modul Sitzkontakt	Modul seat contact	
A68	019	14	Modul Sitzkontakt	Modul seat contact	
A71	008	12	Modul Vibrationsverriegelung	Modul vibration,interlock	
A71	019	7	Modul Vibrationsverriegelung	Modul vibration,interlock	
A72	012	7	Steuergeraet Klimaanlage, Heizung	Control unit,air conditioning,heating	
A76	010	10	Druckerkontroller	Printer controller	
A77	010	7	Spannungsregler	Voltage regulator	
A83	009	7	Elektronik Messtechnik	electronic measurement−equipment	TYP 18633
A83	018	16	Elektronik Messtechnik	electronic measurement−equipment	
A87	010	14	USB−CAN Schnittstelle BCM	USB−CAN Interface BCM	
A88	013	8	Vorschaltgerät, Xenon Licht	ballast system, Xenon−light	
A89	013	9	Vorschaltgerät, Xenon Licht	ballast system, Xenon−light	
A90	013	10	Vorschaltgerät, Xenon Licht	ballast system, Xenon−light	
A91	013	11	Vorschaltgerät, Xenon Licht	ballast system, Xenon−light	
A92	010	18	GPS Receiver	GPS receiver	
A93	010	19	GPS Antenne	GPS antenna	
A94	010	19	GPS Antenne	GPS antenna	
B03	004	13	Unterdruckschalter Luftfilter	Vacuum switch, air cleaner	
B06	004	10	Druckschalter Motoroel	Pressure switch, engine oil	
B10	016	6	Naeherungsinitiator Knickgelenk	Proximity switch, articulated joint	MAX 0,3A
B11	006	18	Signalhorn	Warning horn	
B15	011	12	Aufnehmer Geschwindigkeit	Transducer, speed	
B15	011	13	Aufnehmer Geschwindigkeit	Transducer, speed	
B15	011	16	Aufnehmer Geschwindigkeit	Transducer, speed	
B15	011	17	Aufnehmer Geschwindigkeit	Transducer, speed	
B20	004	6	Temperaturschalter Hydraulikoel	Temperature switch, hydraulic oil	97−92_GC
B21	004	13	Differenzdruckschalter Hydr.−Oelfilter	Pressure diff. switch, hydr. oil filter	
B21	004	14	Differenzdruckschalter Hydr.−Oelfilter	Pressure diff. switch, hydr. oil filter	
B30	004	11	Temperaturschalter Motoroel	Temperature switch, engine oil	110_GC
B33	004	4	Sensor Wassertankrestmenge	Sensor, water tank residual quantity	
B39	008	3	Aufnehmer Fahrhebel	Transducer, travel lever	4−20 mA
B51	014	9	Lautsprecher Radio	Speaker radio	
B51	014	10	Lautsprecher Radio	Speaker radio	
B53	002	12	Temperaturgeber Kuehlmittel	Temperature switch, collant	(R)_t
B55	004	7	Kuehlmittelstand Ausgleichsbehaelter	Coolant charge expansion tank	
B63	003	8	Naeherungsinitiator Bremse	Proximity switch, brake	Max. 300mA
B84	009	13	Aufnehmer Beschleunigung, links	Trancducer, acceleration, left	
B85	009	12	Aufnehmer Beschleunigung, rechts	Trancducer, acceleration, right	
B97	009	10	Aufnehmer Verstellmotor	Sensor, ajustable motor	
B103	012	7	Temperaturschalter Klimaanlage	Temperature switch, air conditioning	4_GC
B104	012	7	Druckschalter Klimaanlage	Pressure switch, air conditioning	
B106	009	7	Temperatursensor Asphalt	Transducer, temperature asphalt	
B124	004	15	Geber Wasserstandsabscheider Diesel	Sender, water separator fuel	
B131	012	9	Temperaturschalter Heizung	Temperature switch, heating	110_GC
E02	007	5	Beleuchtung Temperaturanzeige	Illumination, temperature gauge	
E04	007	7	Beleuchtung Geschwindigkeitsanzeige	Illumination, speedometer	
E08	007	9	Blinkleuchte vorne links	Indicator, front, lh.	21W
E09	007	9	Blinkleuchte hinten links	Indicator, rear, lh.	21W
E09	007	10	Blinkleuchte hinten links	Indicator, rear, lh.	21W
E10	007	11	Blinkleuchte vorne rechts	Indicator, front, rh.	21W
E11	007	12	Blinkleuchte hinten rechts	Indicator, rear, rh.	21W
E11	007	12	Blinkleuchte hinten rechts	Indicator, rear, rh.	21W
E12	007	15	Parkleuchte links	Parking light, lh.	5W
E13	007	13	Schlussleuchte links	Tail light, lh.	5W
E13	007	14	Schlussleuchte links	Tail light, lh.	5W
E14	007	16	Parkleuchte rechts	Parking light, rh.	5W
E15	007	17	Schlussleuchte rechts	Tail light, rh.	5W
E15	007	17	Schlussleuchte rechts	Tail light, rh.	5W
E16	007	19	Scheinwerfer links	Head light, lh.	55 WATT
E17	007	20	Scheinwerfer rechts	Head light, rh.	55 WATT
E18	007	4	Arbeitsscheinwerfer links	Working head light, lh.	55W
E19	007	5	Arbeitsscheinwerfer rechts	Working head light, rh.	55 WATT
E23	013	2	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	55W
E23	013	7	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	3,5A
E23	015	2	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	3,5A
E23	015	17	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	55 WATT
E25	013	3	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	55W
E25	013	9	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	3,5A
E25	015	4	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	3,5A
E25	015	18	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	55 WATT
E27	007	1	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	55 WATT
E27	013	4	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	55W
E27	013	11	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	3,5A
E27	015	6	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	3,5A
E27	015	19	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	55 WATT
E28	007	2	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	55 WATT
E28	013	2	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	55W
E28	013	10	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	3,5A

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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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The control piston moves to the corresponding direction and operates the swash plate via the swashing lever accordingly.



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High pressure relief valves

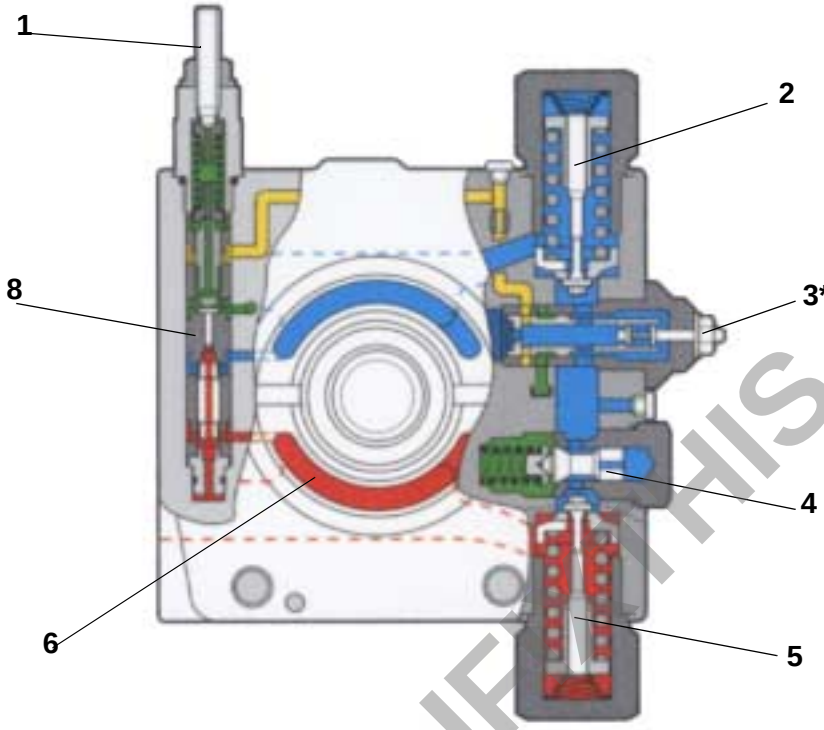


Fig. 4 High pressure relief valves

1 Setscrew for pressure override

2 High pressure relief valve with integrated boost check valve

3* not available on vibration pump

4 Charge pressure relief valve

5 High pressure relief valve

6 Valve plate

7 Pressure override

When switching the vibration off the vibration motors for a short while have the function of a pump. They pump the oil back to the vibration pump. This effect is caused by the rotating exciter shafts with the attached eccentric weights.

Since the vibration pump is already in neutral position, the oil cannot pass through the pump. In this case the pressure override valve has no function. Under this condition the high pressure relief valves work as brake valves.

The functions of pressure override valve and high pressure relief valves in the vibration circuit are identical with the functions of these valves in the travel circuit. The description of these components does therefore not need to be repeated.

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AC-Variants: BW 141 - 154 AC-4

On the machines described in this training manual the travel system consists of a closed hydraulic circuit. It mainly consists of travel pump with integrated safety elements and travel motors with travel gears. The AC wheel set is equipped with radial piston travel motors.

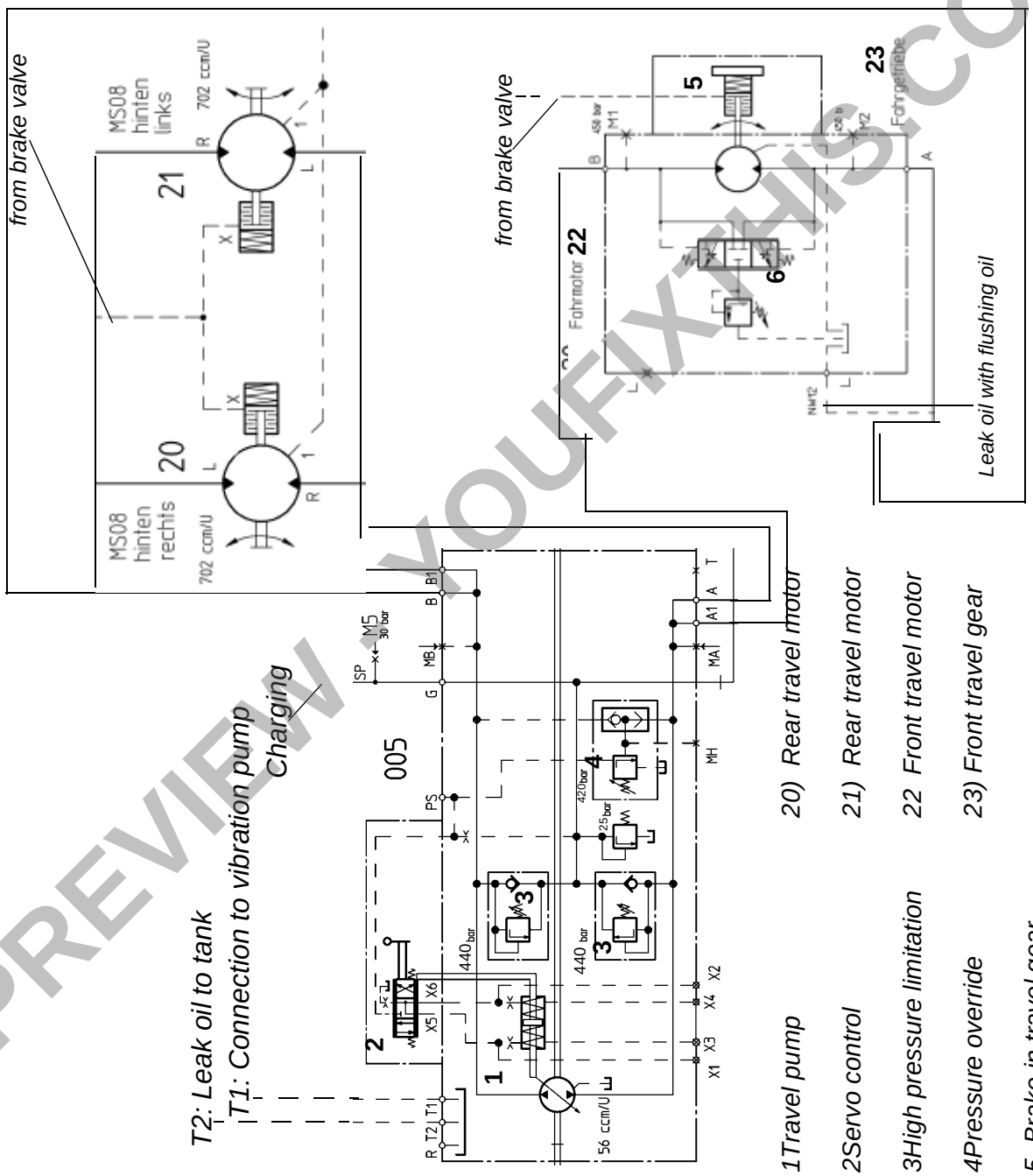


Fig. 1Hydraulic diagram travel system BW 141/151 AC-4

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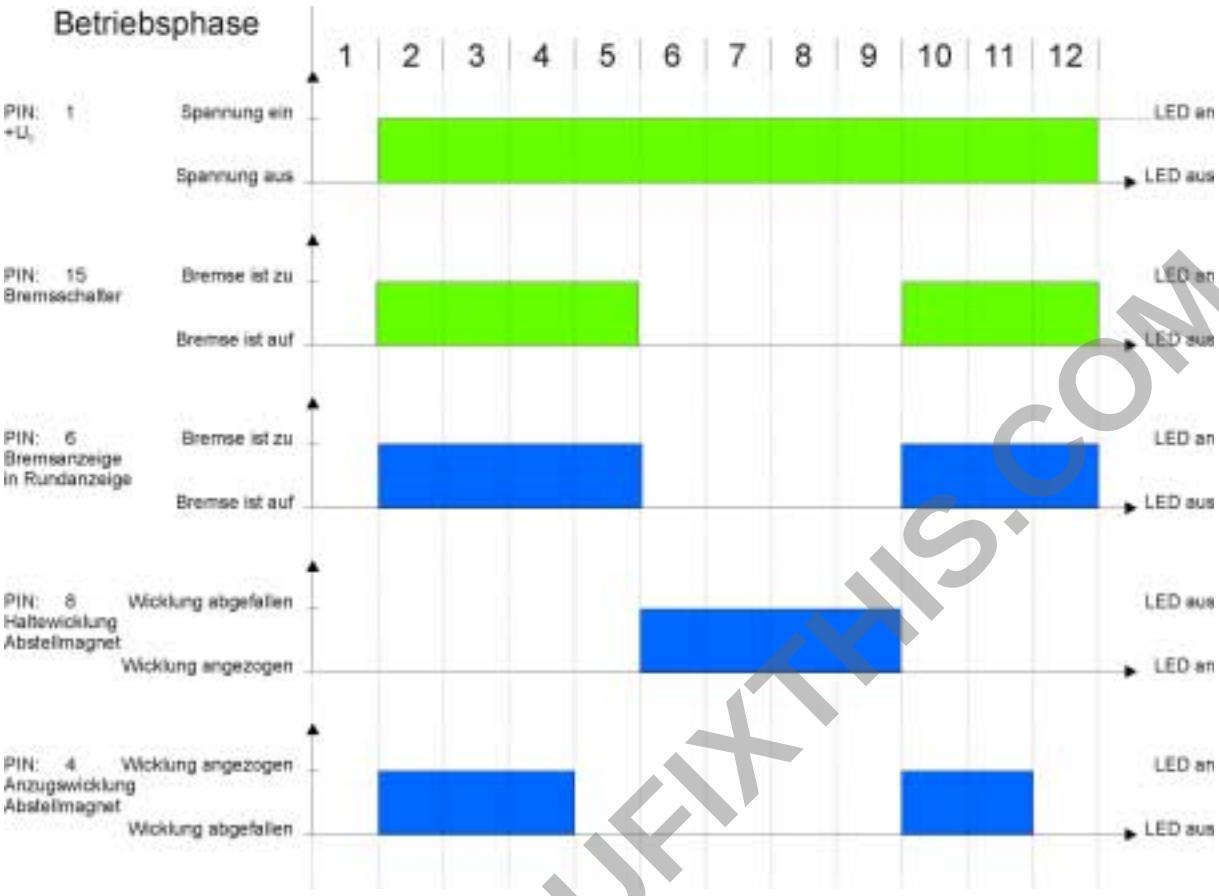


Fig. 3:: Signals after module start

This all takes place, irrespective of whether the driver is seated or not!
If the travel lever is in neutral position (LED on PIN 12 is off), the engine can be started.

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