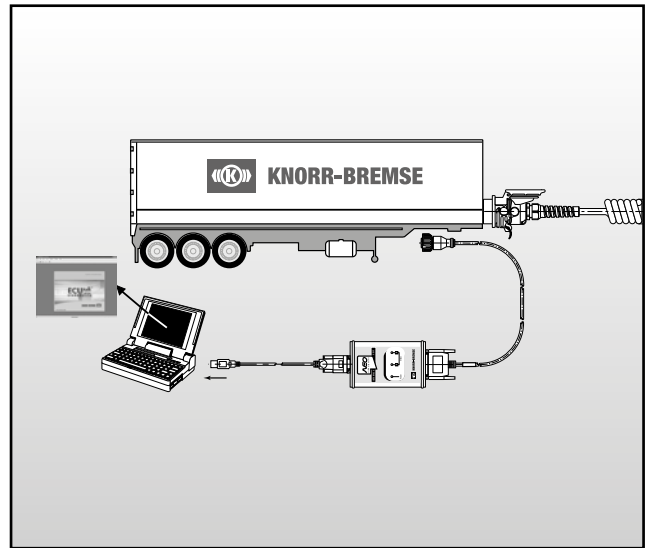


Function

The term '*Diagnostics*' is an all-embracing name which may be applied to any device or program which is able to provide status information in a format that is understandable to the user. With respect to the KB4TA/KB4TA D the following options provide different levels of diagnostics:

- Warning lamps
- ECUTalk® diagnostic program

Initial indication of a potential error or condition is generally displayed to the driver by means of a warning lamp(s) in the cab of the towing vehicle. This includes detectable faults within the braking system and auxiliary functions.



Operation

Warning lamp signals

It is a requirement that towing vehicles shall have a yellow warning lamp that is controlled by the trailer braking system or anti-lock braking system via Pin 5 of the ISO 7638 connector.

Diagnostic Program ECUTalk®

ECUTalk® is a software platform produced specifically to assist the user in the configuration, fault diagnosis and system check of KB4TA/KB4TA D and other Knorr-Bremse trailer electronically controlled products. Its functionality includes:

- System parameterisation
- Reading configuration data from the ECU.
- End of Line (EOL) test
- Fault diagnosis
- Trouble shooting by use of the "System Check" function
- Reading of "Operational Data"
- Creation and storing of EOL test reports, fault records and load sensing plate labels.

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA / KB4TA D System Diagnostics

Doc. No. Y250910 (EN - Rev. 000)
July 2016

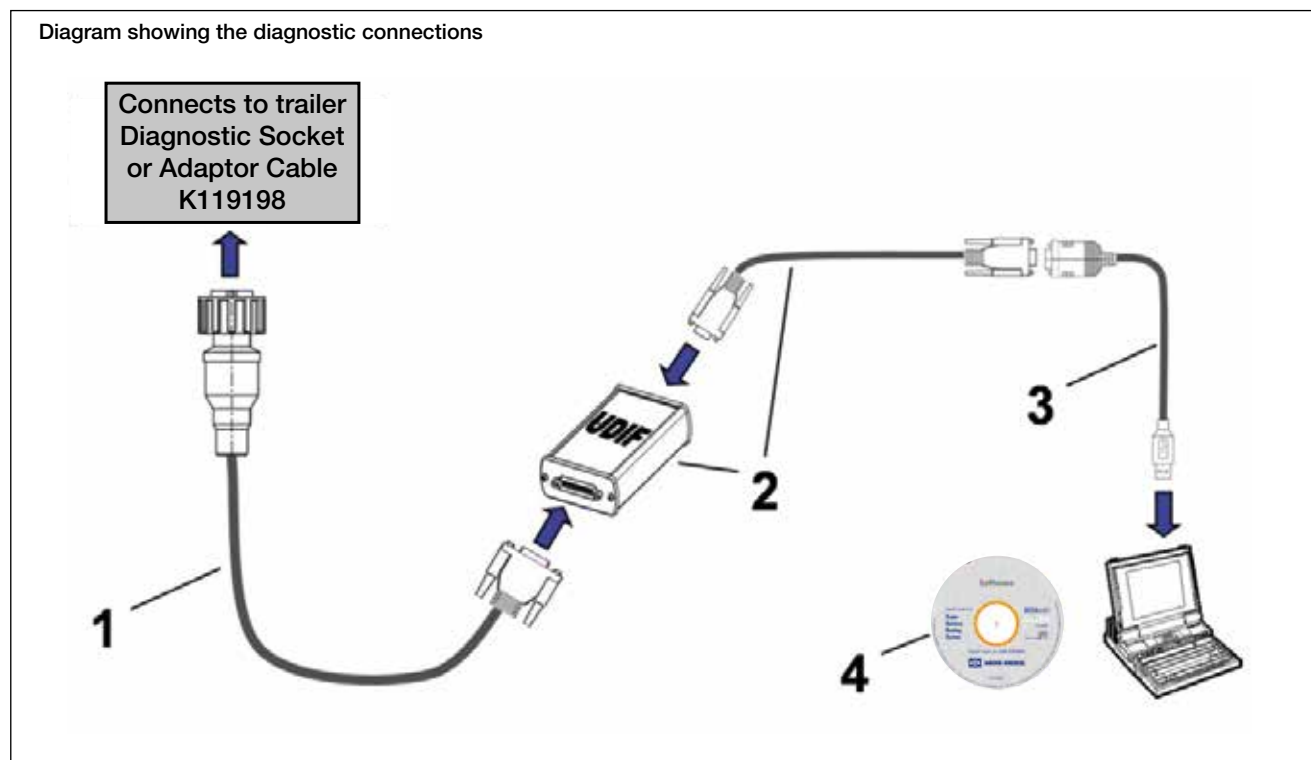
Diagnostic Components/Tools

In order to configure the KB4TA, carry out 'End Of Line' testing and system checks – additional hardware and software is required as listed below:

Pos.	Name	Part No.	Type No.	Description
1	Diagnostic cable	K010837	EZ1037	length = 3m
2	Diagnostic Set UDIF ¹⁾	II39809F	EZ1031	includes connecting cable Z005474 (9-pin sub-D-plug and 9-pin sub D-socket)
3	Connecting cable	Z007887		optional for USB-connection to PC
4	Diagnostic software			"ECUtalk® KB4TA" Software - download from: www.Knorr-BremseCVS.com

1) UDIF = Universal Diagnostic Interface

Diagram showing the diagnostic connections



For information on cables see PD-203-380, Document No. Y250909.

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

Blink Code Diagnostics

The KB4TA module/KB4TA D ECU provides diagnostic and configuration functions through blink code diagnostics. This means that the technician, even without diagnostic tools, can read a series of blinks of the ABS warning lamp(s) (in the cab of the towing vehicle and/or on the trailer headboard) to diagnose the trouble codes being generated. However to enter this diagnostic mode the KB4TA module/KB4TA D ECU must be wired to accept both a permanent and stop lamp power supply.

The blink code diagnostics mode is entered by providing constant power to the ignition circuit and by switching the stop lamp power input supply "ON" and "OFF" a number of times (see Diagnostic Trouble Codes). With a parked towing vehicle attached to the trailer, this is achieved by switching on the ignition and, after the power up sequence is complete, applying and releasing the brake pedal a number of times (see Diagnostic Trouble Codes). Depending on the blink code mode activated, the KB4TA module/KB4TA D ECU will blink the trailer ABS warning lamp(s) to display:

- active faults
- inactive faults (fault history)
- ABS configuration
- odometer mileage.

Wait until after the modulator 'chuff test' before activating the stop lamp power. Following a single display of all available messages, the trailer ABS warning lamp(s) will remain on for five seconds and then return to normal operating mode.

Blink code diagnostics can only be activated following a power up, where wheel speeds have not been detected. If a wheel speed signal is generated during the blink code diagnostics mode, the module will cancel the blink code diagnostics and return to normal operating mode. Blink code diagnostics must be activated within the first 15 seconds of ignition power being applied.

If stop lamp power is continuously applied for longer than five seconds, blink code diagnostics will be disabled until the next time the ignition power is cycled.

Diagnostic Trouble Codes (DTCs)

Display "Active" DTCs

To display "active" codes, switch on the ignition and apply/release the brake pedal three times within 15 seconds. Following activation, there will be a five second delay followed by a blink code display of all "active" trouble codes.

Display "Inactive" DTCs

To display "inactive" trouble code history, switch on the ignition and apply/release the brake pedal four times within 15 seconds. Following activation, there will be a five second delay followed by a blink code display of all "inactive" trouble codes held in the ECU memory.

KB4TA / KB4TA D System Diagnostics

Doc. No. Y250910 (EN - Rev. 000)
July 2016

ABS Configuration

To display the ABS configuration, switch on the ignition and apply/release the brake pedal six times within 15 seconds. The first blink code defines the number of sensors (2 or 4), the second defines the number of modulators (2 or 3) and the third defines the control mode which can be ignored.


Display Odometer Mileage

To display the trailer odometer mileage, switch on the ignition and apply/release the brake pedal seven times within 15 seconds. Following activation, there will be a five second delay followed by a blink code display of the odometer information (x1000). Example: 152.431 km will be displayed as 152 (x1000); i.e. one blink (pause), five blinks (pause), two blinks. Zeros will be displayed by the ABS warning lamp blinking twice. Odometer mileage cannot be altered with blink code diagnostics. Complete odometer information can be retrieved using the PC diagnostic tool ECUTalk®.

Blink Code Label

ABS sign attached to the vehicle showing the DTCs

1st Blink Code		2nd Blink Code	
Code	Location	Code	Description
1	All	1	No faults present
2	Sensor SL	1	Wheel speed sensor air gap too big
3	Sensor SR	2	Loss of wheel speed sensor signal
4	Sensor SAL	3	Noisy wheel speed sensor signal
5	Sensor SAR	4	Short or open circuit wheel speed sensor
		5	Tyre size differential out of range
		6	Wheel speed sensor configuration error
6	Power	1	Voltage too high
		2	Voltage too low
		3	Excessive resistance on ISO 7638 Pin1
7	Modulator 22	2	Exhaust solenoid short or open circuit
8	Modulator 21	3	ABS valve installation error
9	AUXIO1 / Modulator 2	4	Valve configuration error
10	Common	1	Internal short to ground
		2	AUXIO1 or Modulator 2 short to ground
		3	ABS valve dynamic error – all valves
		4	Excessive ABS activity
		5	AUXIO1 or Modulator 2 short to battery
11	ECU	1	Internal error
		2	Configuration error
12	AUXIO1	1	Short or open circuit
13	AUXIO2		
14	System	2	Service interval exceeded




Trailer-ABS KB4TA

To read current and stored faults:

1. Ensure that the ABS is powered via the ISO 7638 connection.
2. Apply and release the brake pedal at 1 second intervals:
 - a) 3 times to read current faults
 - b) 4 times to read stored faults.
3. After a period of 5 seconds the blink codes will be displayed.
4. Observe the trailer ABS lamp in the towing vehicle and record the blink code sequence.
5. A description of each blink code is shown in the table.
6. After rectifying any faults, check that the trailer ABS warning lamp in the towing vehicle is not illuminated after turning the ignition off and on. This may necessitate driving the vehicle at a speed >10km/h.

Note: Blink code information is only available when the Stop Lamp power option and either 2S/2M or 4S/2M ABS are configured.



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

Diagnostic Trouble Codes — Blink Code Quick Reference

1st Blink Code		2nd Blink Code		Information on action required
Code	Location	Code	Description	
1	All	1	No Faults	System fully operational - no faults detected
2	Sensor SL	1	Wheel speed sensor air gap is too big	Go to Chart 5
3	Sensor SR	2	Loss of wheel speed sensor signal	Go to Chart 5
4	Sensor SAL	3	Noisy wheel speed sensor signal	Go to Chart 5
5	Sensor SAR	4	Short or open circuit wheel speed sensor	Go to Chart 5
		5	Tyre size differential out of range	Verify correct tyre size, proper tyre inflation & correct number of sensing ring teeth. Verify that the ECU has the correct tyre size settings.
		6	Wheel speed sensor configuration error	Verify correct ABS configuration.
6	Power Supply	1	Voltage too high	Go to Chart 4
		2	Voltage too low	Go to Chart 4
		3	Excessive resistance ISO 7638 pin 1	Go to Chart 4
7	Modulator M22	2	Exhaust solenoid shorted or open circuit	Go to Chart 6
8	Modulator M21	3	ABS valve installation error	Go to Chart 6
9	AUXIO1 / Modulator	4	Valve configuration error	Verify correct ABS configuration.
10	Common	1	Internal short to ground	Check for damaged or corroded connectors. Check for damaged wiring. After corrections or if no issues found, then clear trouble codes. If problems return, replace the module.
		2	AUXIO1 or modulator 2 short to ground	Go to Chart 6
		3	ABS modulator dynamic error - all valves	Go to Chart 6
		4	Excessive ABS activity	Go to Chart 4 or Chart 6
		5	AUXIO1 or modulator 2 short to battery	Go to Chart 6
11	ECU	1	Internal error	Check for damaged or corroded connectors. Check for damaged wiring. After corrections or if no issues found, then clear trouble codes. If problems return, replace the module.
		2	Configuration error	Verify correct ABS configuration.
12	AUXIO2	1	Shorted or open circuit	Check for corroded/damaged wiring or connectors
13	AUXIO3	1	Shorted or open circuit	Check for corroded/damaged wiring or connectors
14	System	2	Service Interval Exceeded	...

To Read Diagnostic Trouble Codes (DTCs):

- 1) Apply constant power to the trailer (towing vehicle ignition switch).
- 2) Within 15 seconds, apply/release the brake pedal at 1 second intervals:
 - (a) 3 times for displaying "Active" DTCs.
 - (b) 4 times for displaying "Inactive" DTCs.
- 3) Observe the dashboard mounted ABS warning lamp and record blink code(s).
- 4) Refer to blink code chart for description.
- 5) After resolving problems, verify that the warning lamp is no longer illuminated.

KB4TA / KB4TA D System Diagnostics

Doc. No. Y250910 (EN - Rev. 000)
July 2016

Diagnostic Troubleshooting Flow Charts

Diagnostic trouble code information can be retrieved from the KB4TA module/KB4TA D ECU by using blink code diagnostics or the PC diagnostic tool ECUTalk®. The following troubleshooting flow charts will help the technician isolate the cause of the problem and confirm whether the problem lies in the component, wiring or connectors.

Troubleshooting should always begin by observing the dashboard or trailer-mounted ABS warning lamp during the KB4TA module/KB4TA D ECU's power-up sequence.

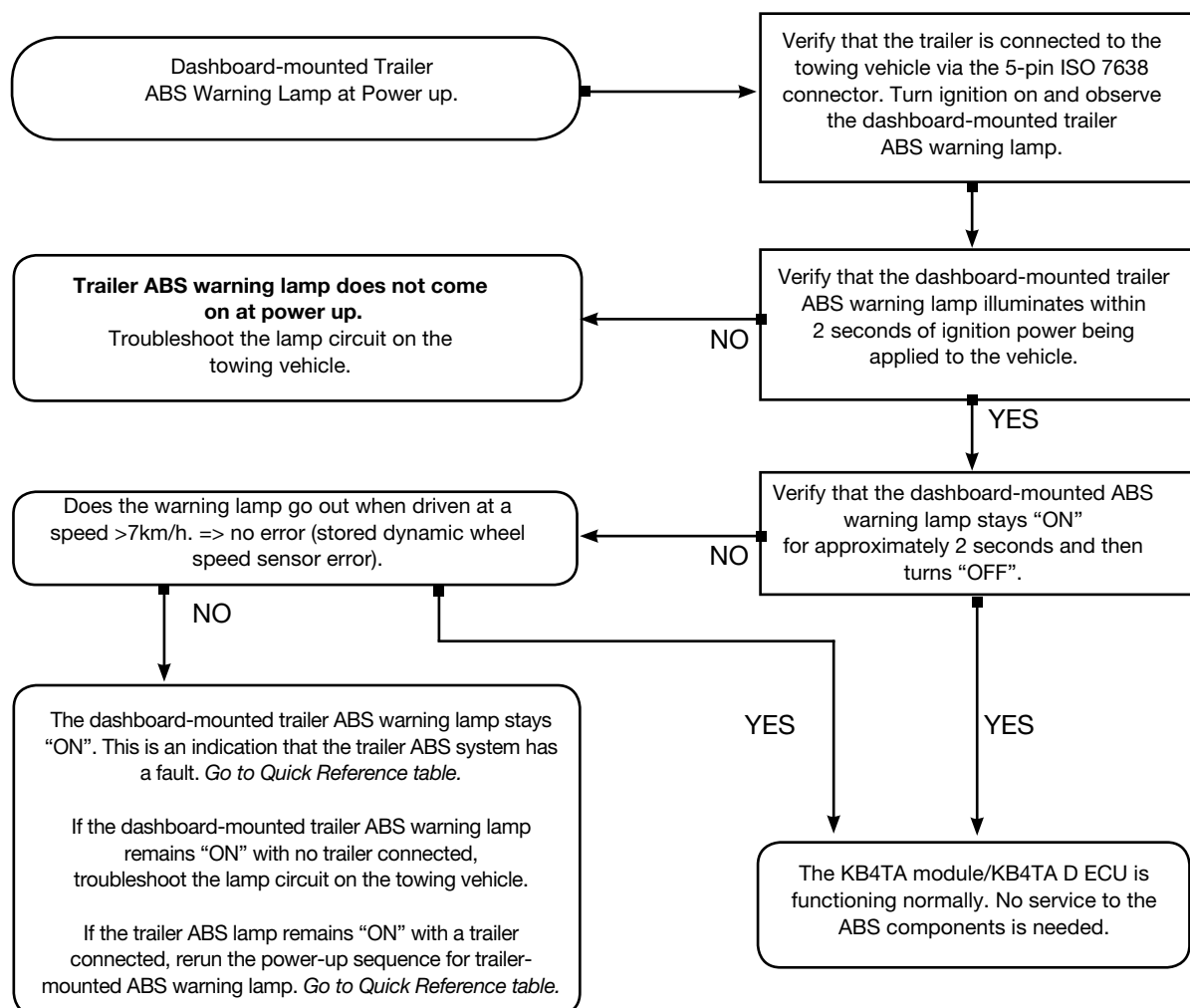
If it is necessary to make electrical measurements, always begin by taking voltage and resistance measurements at the 12-pin ECU harness connector.

Once the circuit problem is found, isolate the area needing attention by repeating the measurements at all connections in the affected circuit working towards the modulator, wheel speed sensor, etc.

No voltage or resistance measurements must be made on the X1 connector pins of the KB4TA module/KB4TA D ECU.

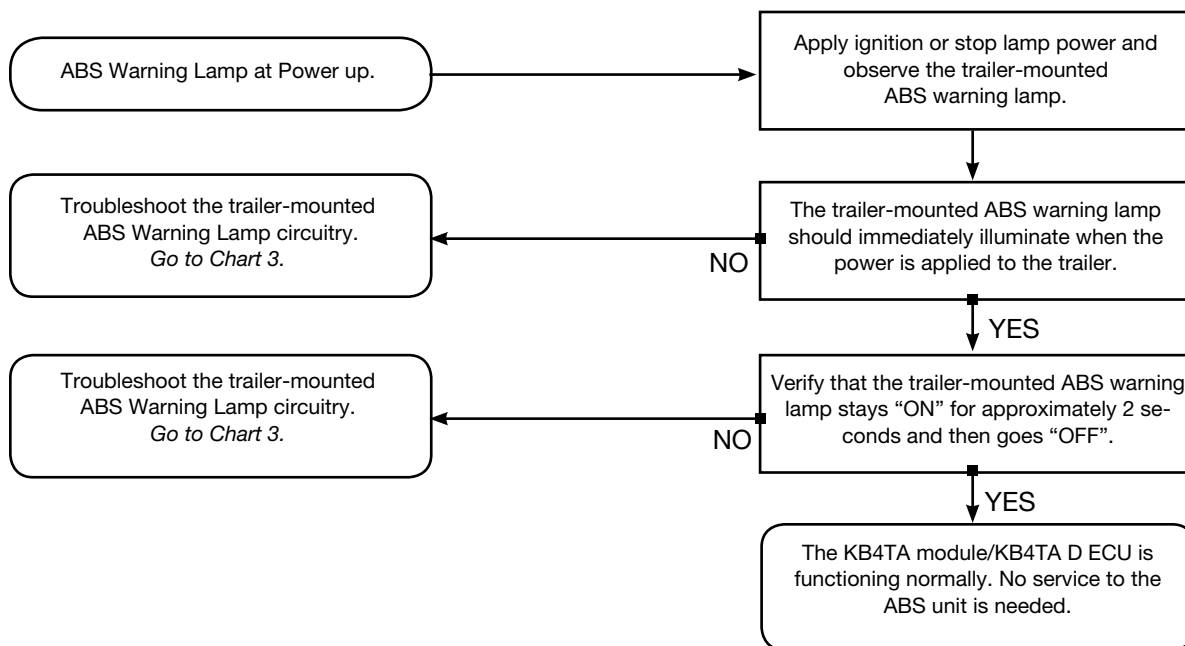
The following pages contain detailed information.

Chart 1 Power-up Sequence – Dashboard mounted ABS Warning Lamp



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

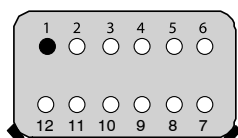
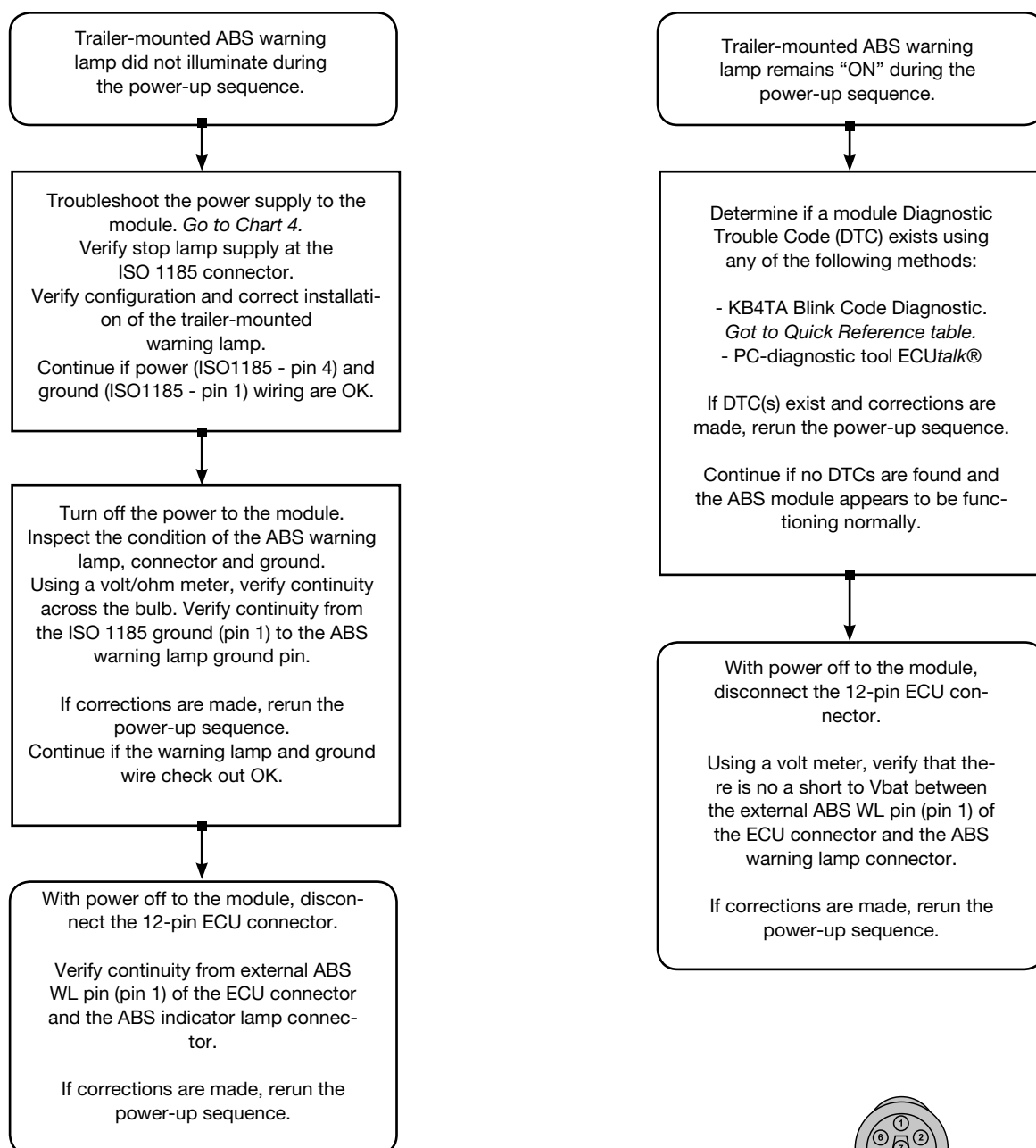
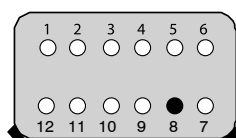
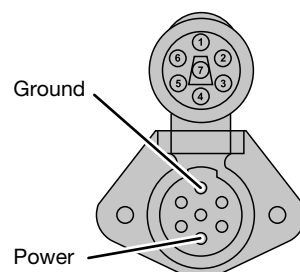
Chart 2 Power-up Sequence – Trailer-mounted ABS Warning Lamp



KB4TA / KB4TA D System Diagnostics

Doc. No. Y250910 (EN - Rev. 000)
July 2016

Chart 3 Troubleshooting the Trailer-mounted ABS Warning Lamp Circuitry

KB4TA Module - X1 Wiring Harness
(Pin 1 - ABS Warning Lamp)KB4TA D Module - X1 Wiring Harness
(Pin 8 - ABS Warning Lamp)ISO1185-connector
(Pin 1 - ground / Pin 4 - stop lamp power)

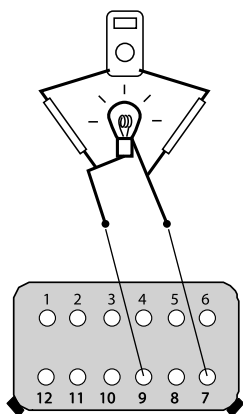
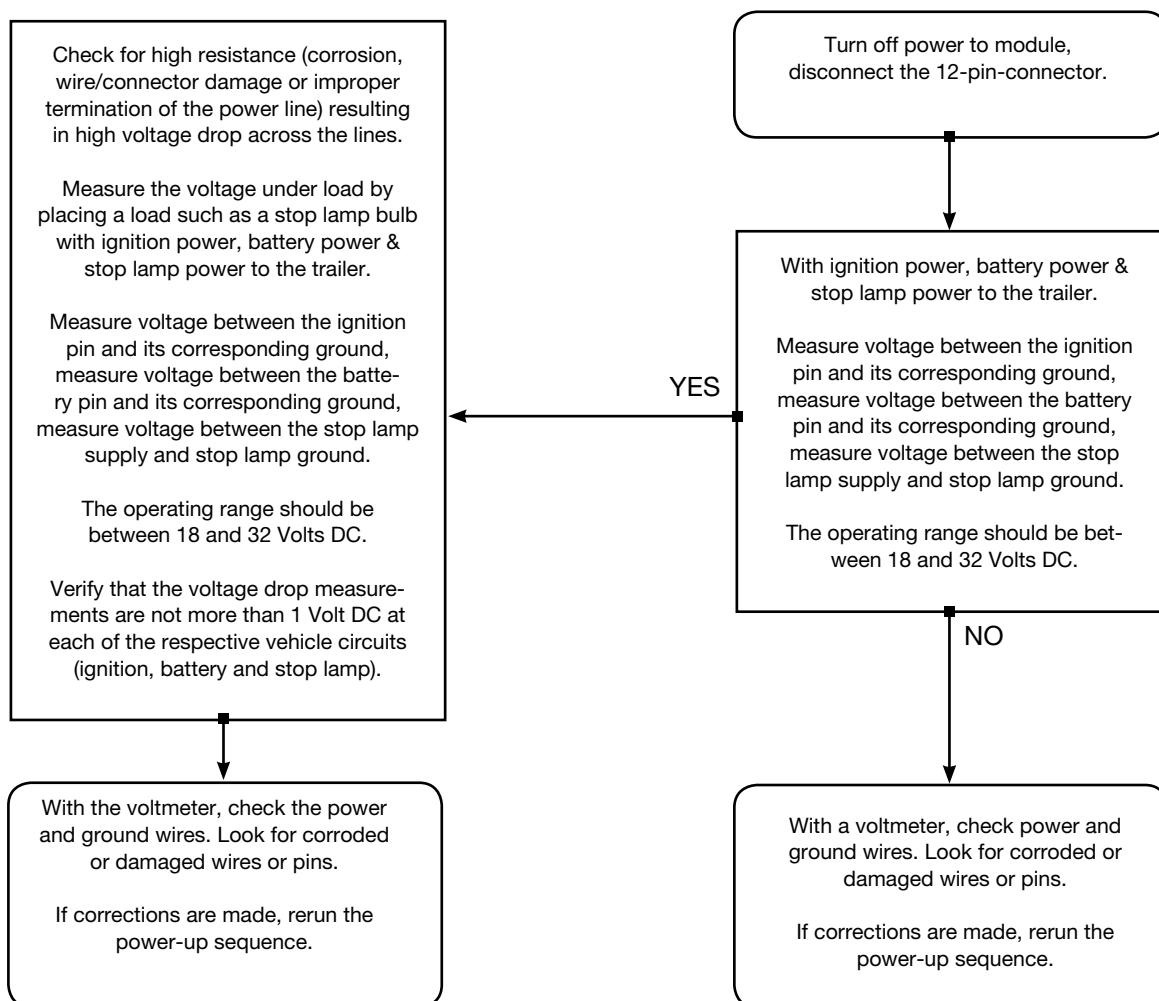
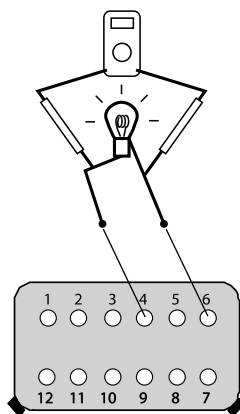
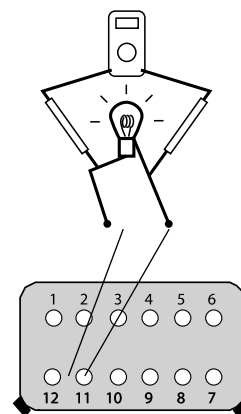
The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer.

Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out.

Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring..

Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

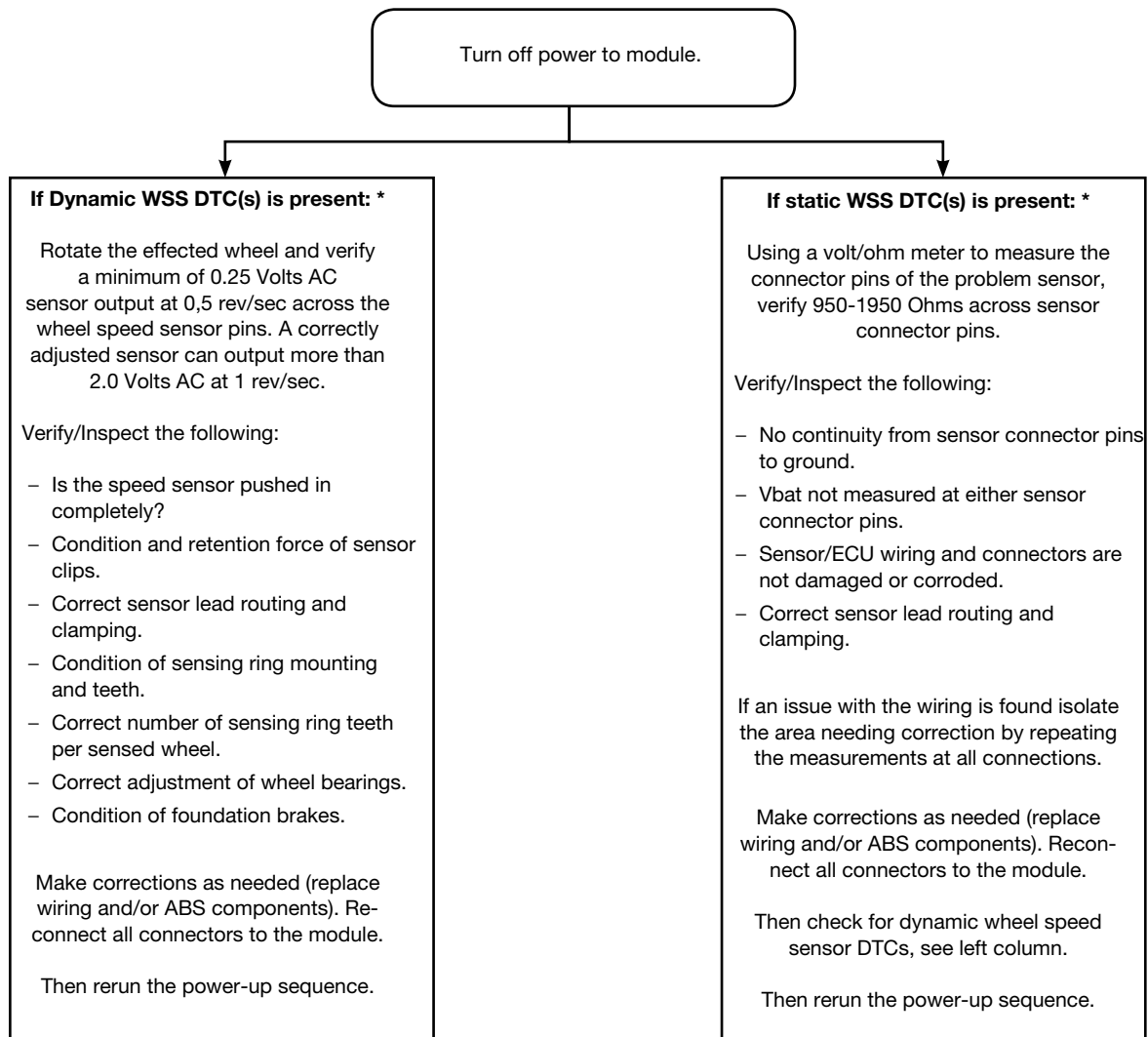
Chart 4 Troubleshooting the ISO 7638 (and ISO 1185 if connected) Power Supply

KB4TA/KB4TA D Module Wiring Harness,
ECU X1 Connector - measure:
Pin 9 (Ignition Power) to Pin 7 (ground)KB4TA/KB4TA D Module Wiring Harness,
ECU X1 Connector - measure:
Pin 6 (Battery Power) to Pin 4 (ground)KB4TA/KB4TA D Module Wiring Harness,
ECU X1 Connector - measure:
Pin 12 (Stop lamp Power) to Pin 11 (ground)

KB4TA / KB4TA D System Diagnostics

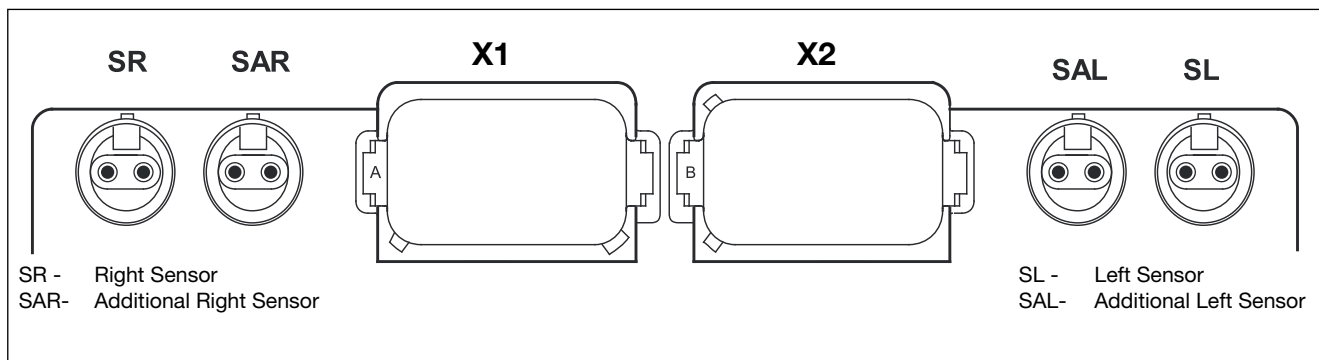
Doc. No. Y250910 (EN - Rev. 000)
July 2016

Chart 5 Troubleshooting the Wheel Speed Sensors



*** Note:** Both static and dynamic wheel speed sensor DTCs may be present.

KB4TA and KB4TA D Modules - WSS Pinning



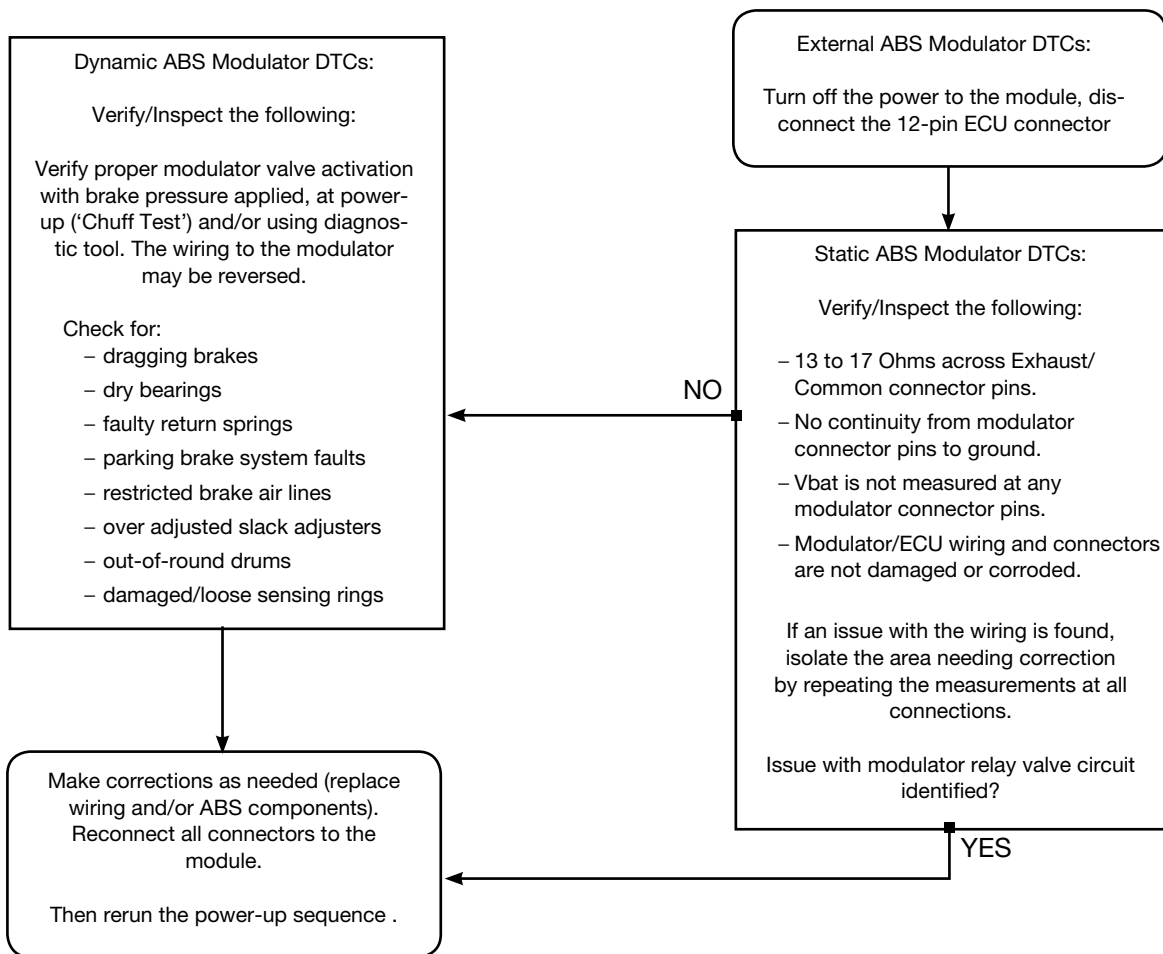
The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer.

Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out.

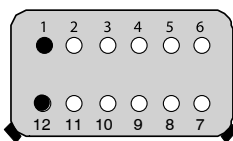
Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring..

Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

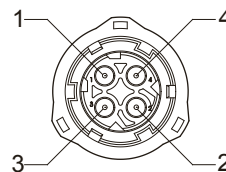
Chart 6 Troubleshooting the Modulator Relay Valve (BR9234 and K019290)



KB4TA

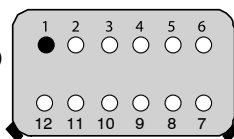


KB4TA Module - X1 Connector
Pin 1 AUXIO1 (Valve 3rd Modulator)
Pin 12 AUXRET1 (Return Line 3rd Modulator)

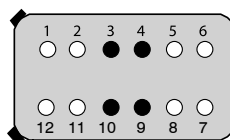


3rd Modulator Connector Pins
Pin 1 AUXIO1 (Exhaust Solenoid)
Pin 2 AUXRET1 (Common - GND)

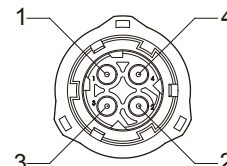
KB4TA D



KB4TA D Module - X1 Connector
Pin 1 AUXIO1 (Valve 3rd Modulator)



KB4TA D Module - X2 Connector
Pin 3 MV1 (SL side Modulator)
Pin 4 MV2 (SR side Modulator)
Pin 9 LSS1 (GND SL & SR Modulators)
Pin 10 LSS1 (GND 3rd Modulator)



SL, SR & 3rd Modulator Connector Pins
Pin 2 MV1, MV2 } (Exhaust Solenoid)
& 3rd Mod }
Pin 3 LSS1 (Common - GND)

KB4TA / KB4TA D System Diagnostics

Doc. No. Y250910 (EN - Rev. 000)
July 2016

Revision Details

Rev. 000 July 2016 New document

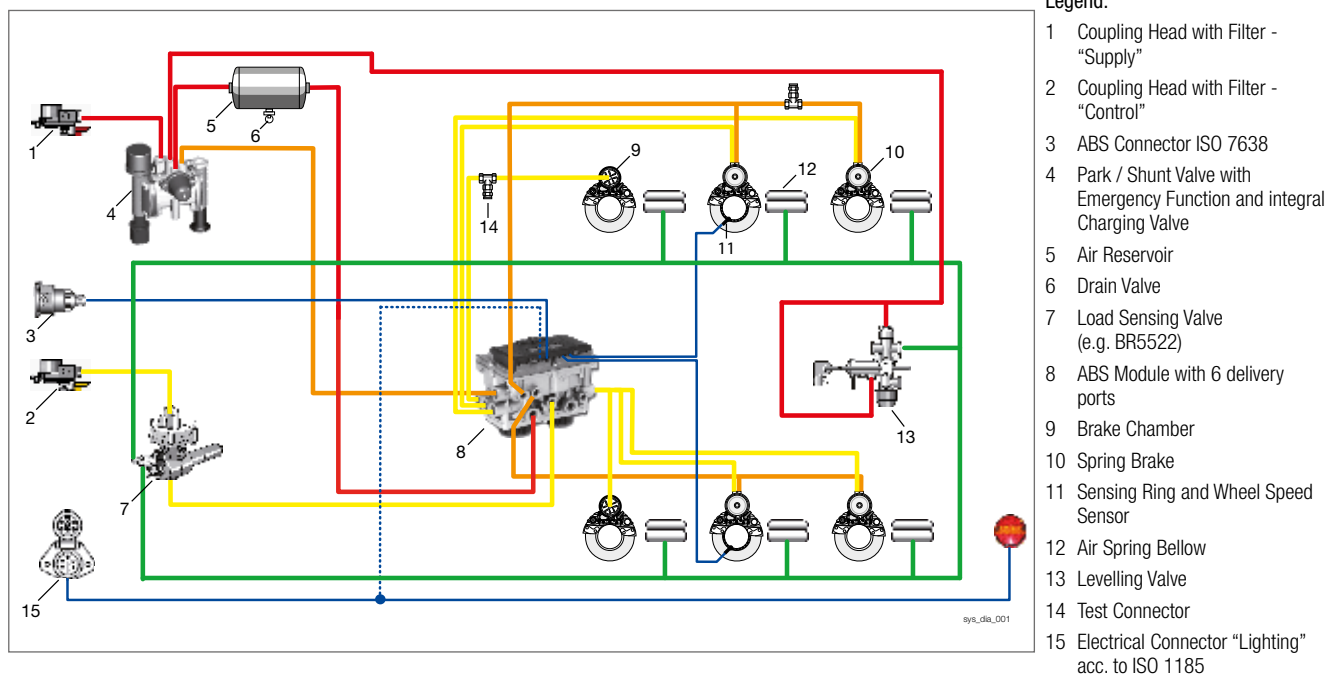
**KNORR-BREMSE**

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

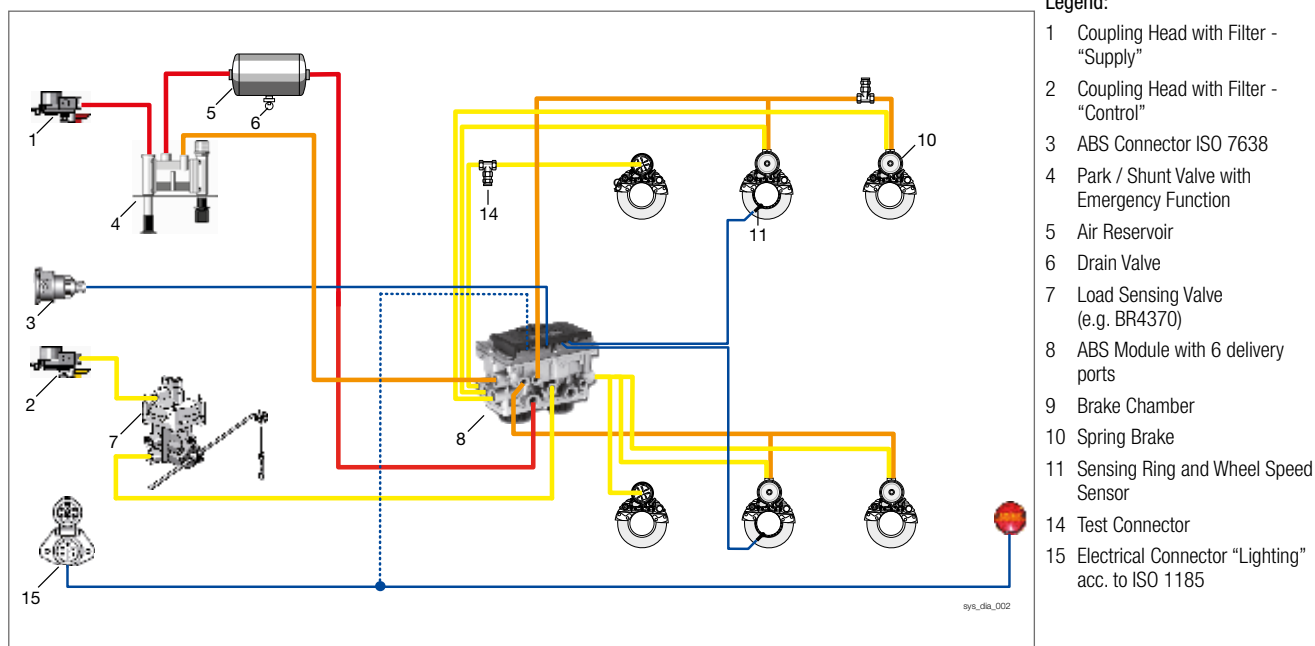


The KB4TA components are capable of working in systems with air or mechanical suspension and with disc or drum brakes. This document shows a range of typical systems. For more information please contact your local Knorr-Bremse representative.

KB4TA System diagram (2S/2M) for semi-trailer with air suspension and disc brakes



KB4TA System diagram (2S/2M) for semi-trailer with mechanical suspension and disc brakes

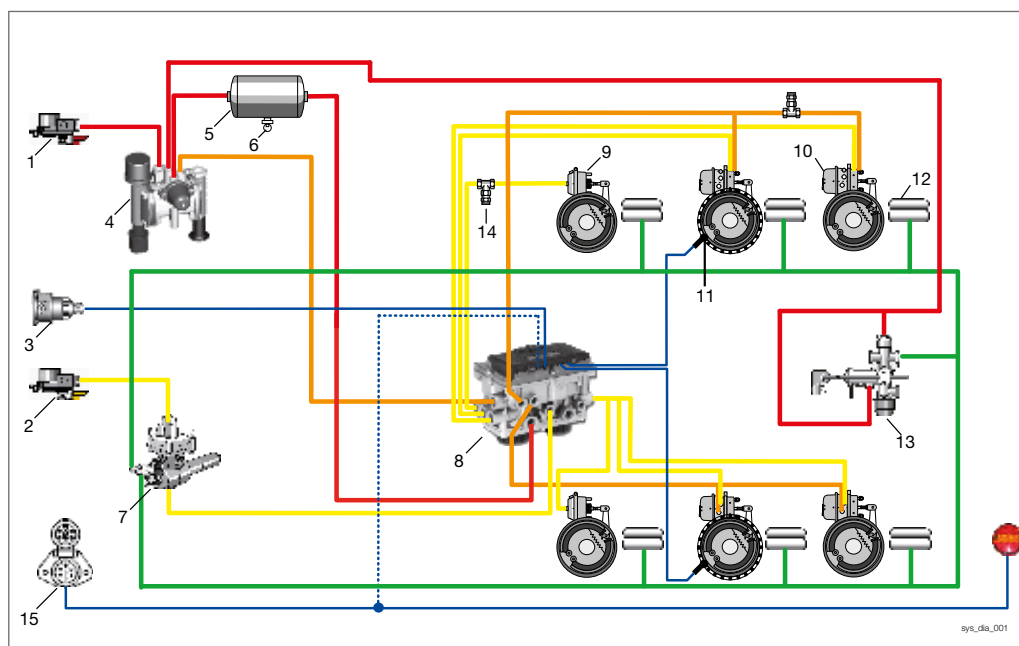


The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA System Diagrams

Doc. No. Y250911 (EN - Rev. 000)
July 2016

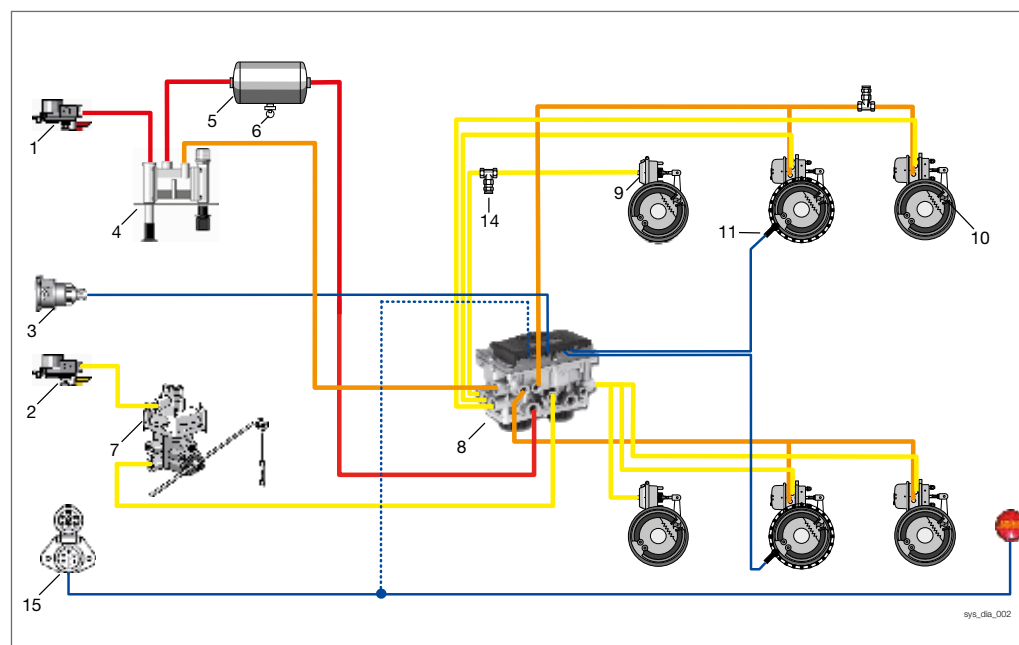
KB4TA System diagram (2S/2M) for semi-trailer with air suspension and drum brakes



Legend:

- 1 Coupling Head with Filter - "Supply"
- 2 Coupling Head with Filter - "Control"
- 3 ABS Connector ISO 7638
- 4 Park / Shunt Valve with Emergency Function and integral Charging Valve
- 5 Air Reservoir
- 6 Drain Valve
- 7 Load Sensing Valve (e.g. BR5522)
- 8 ABS Module with 6 delivery ports
- 9 Brake Chamber
- 10 Spring Brake
- 11 Sensing Ring and Wheel Speed Sensor
- 12 Air Spring Bellow
- 13 Levelling Valve
- 14 Test Connector
- 15 Electrical Connector "Lighting" acc. to ISO 1185

KB4TA System diagram (2S/2M) for semi-trailer with mechanical suspension and drum brakes



Legend:

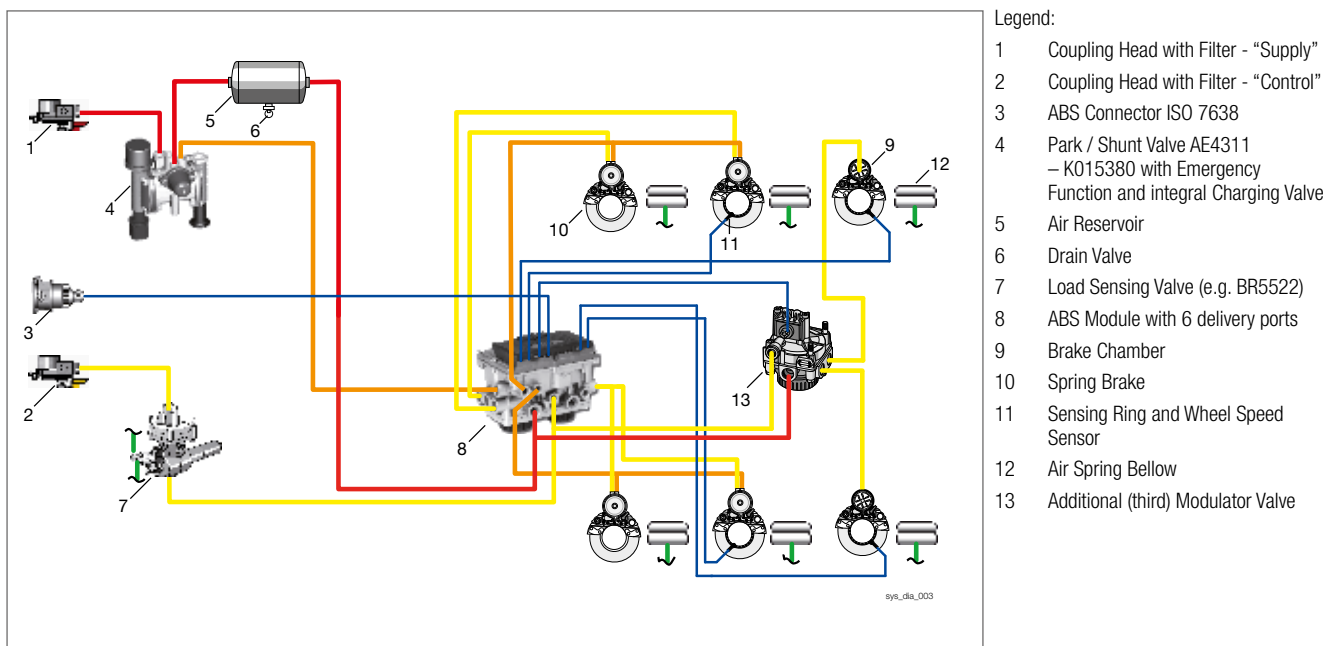
- 1 Coupling Head with Filter - "Supply"
- 2 Coupling Head with Filter - "Control"
- 3 ABS Connector ISO 7638
- 4 Park / Shunt Valve with Emergency Function
- 5 Air Reservoir
- 6 Drain Valve
- 7 Load Sensing Valve (e.g. BR4370)
- 8 ABS Module with 6 delivery ports
- 9 Brake Chamber
- 10 Spring Brake
- 11 Sensing Ring and Wheel Speed Sensor
- 14 Test Connector
- 15 Electrical Connector "Lighting" acc. to ISO 1185

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

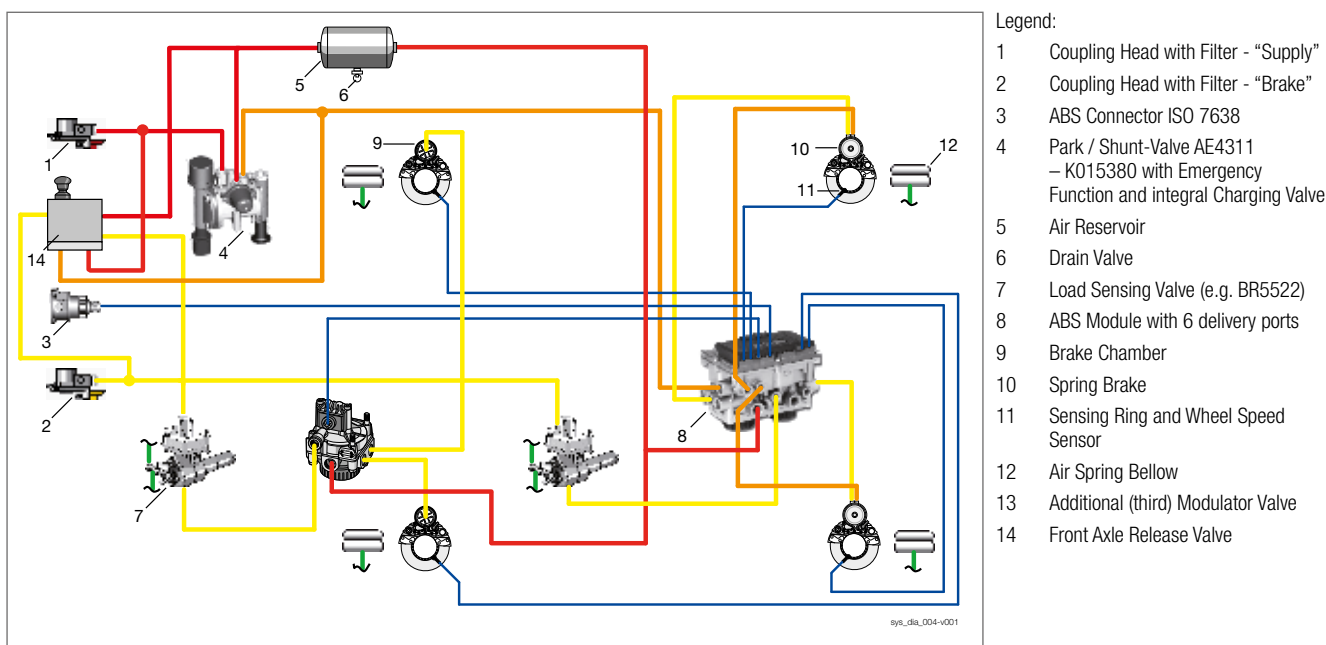
Doc. No. Y250911 (EN - Rev. 000)
July 2016

KB4TA System Diagrams

KB4TA System diagram (4S/3M) for semi-trailer with air suspension and disc brakes



KB4TA System diagram (4S/3M) for full trailer with air suspension and disc brakes



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA System Diagrams

Doc. No. Y250911 (EN - Rev. 000)
July 2016

Revision Details

Rev. 000 July 2016 New document.

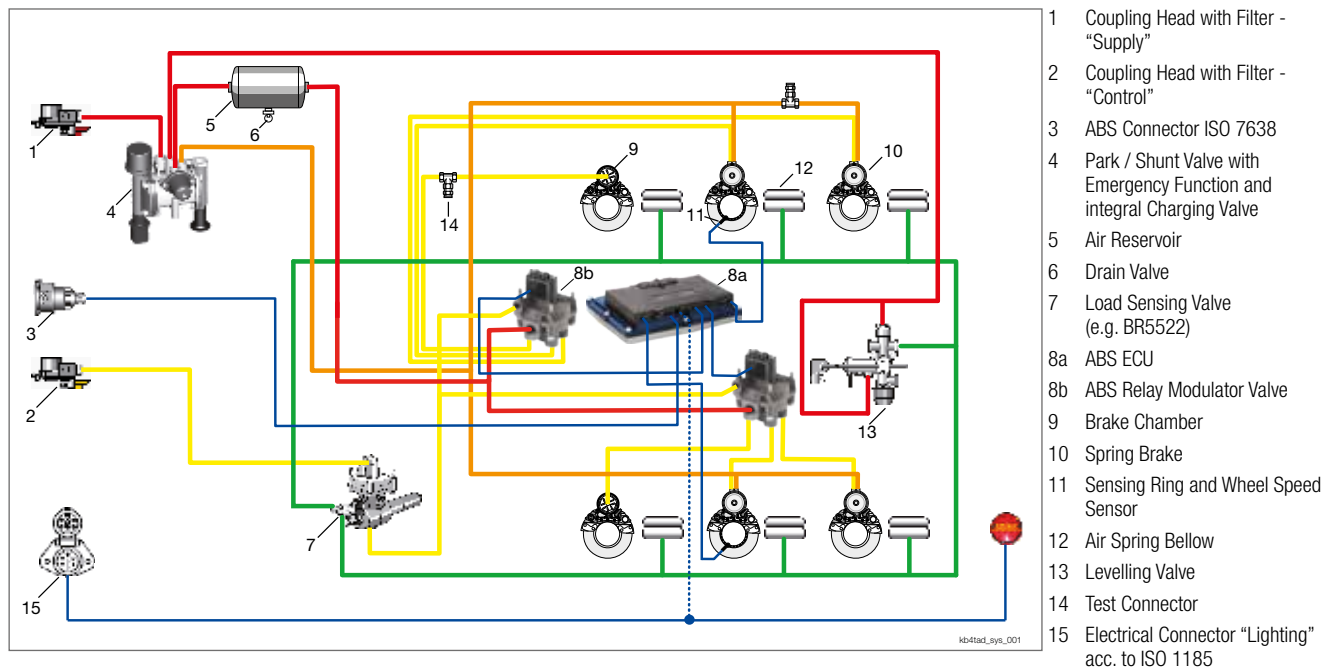
**KNORR-BREMSE**

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

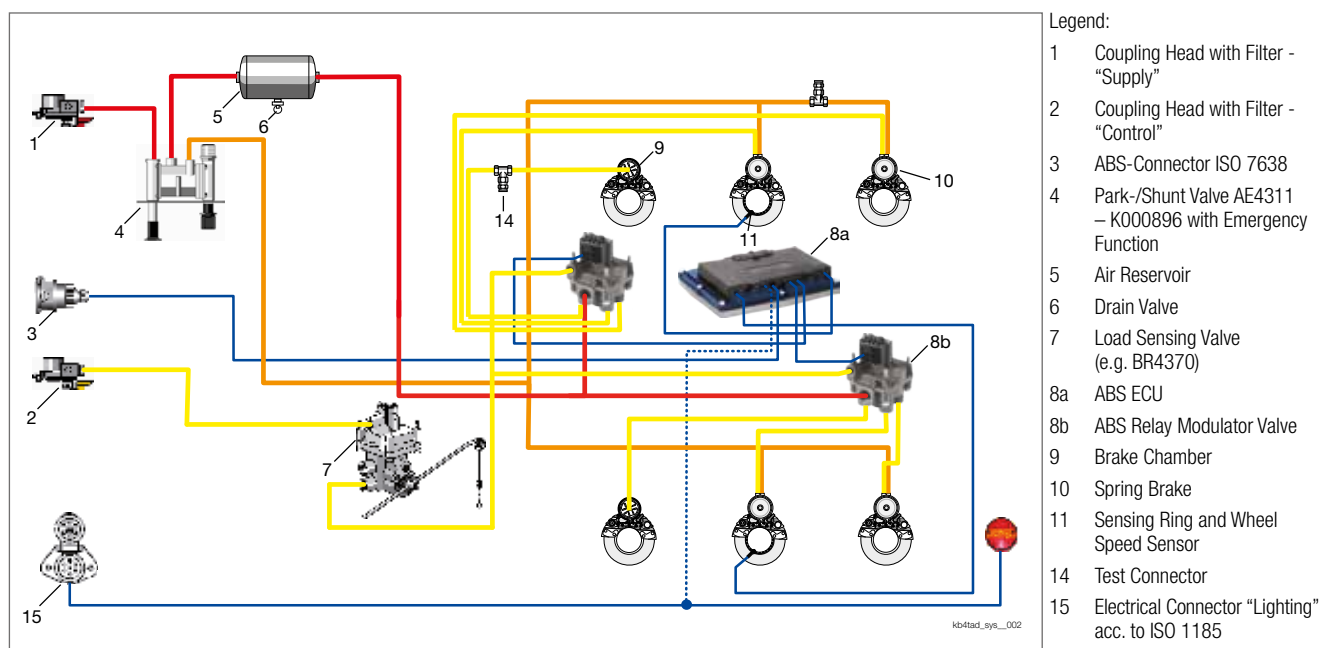


The KB4TA D components are capable of working in systems with air or mechanical suspension and with disc or drum brakes. This document shows a range of typical systems. For more information please contact your local Knorr-Bremse representative.

KB4TA D System diagram (2S/2M) for semi-trailer with air suspension and disc brakes
(ECU mounted above centre of bogie)

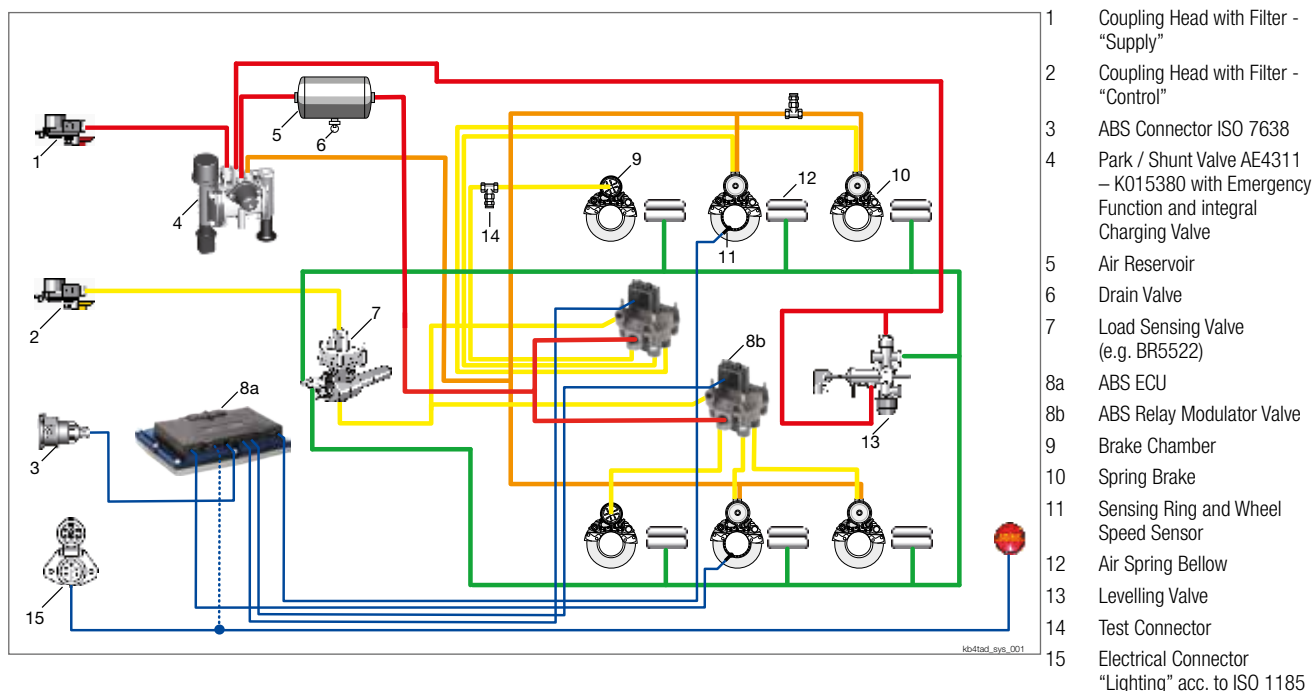
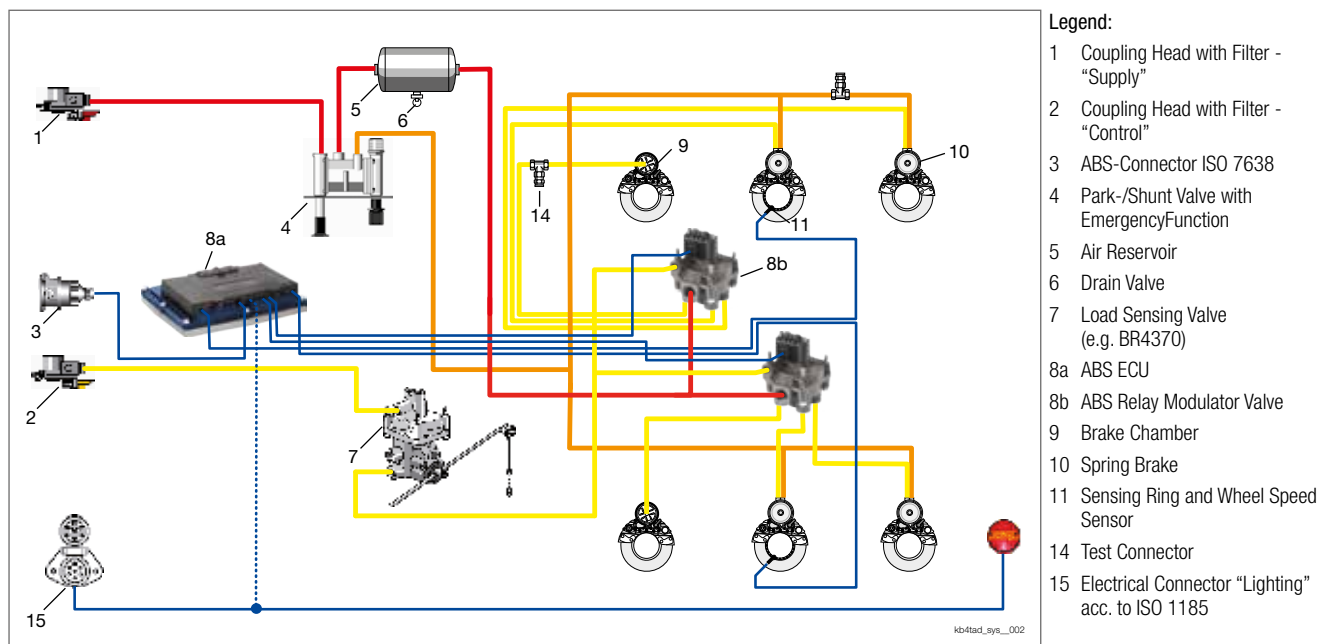


KB4TA D System diagram (2S/2M) for semi-trailer with mechanical suspension and disc brakes
(ECU mounted above centre of bogie)



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA D System Diagrams

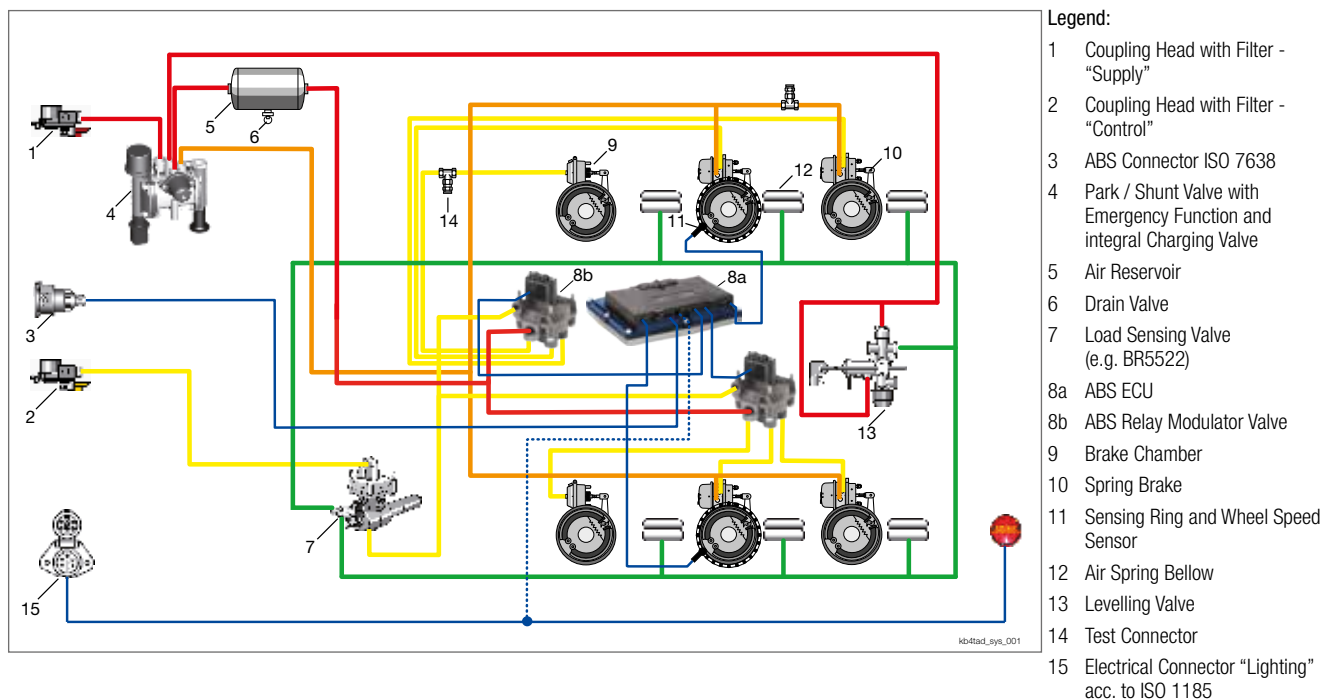
Doc. No. Y250913 (EN - Rev. 000)
July 2016KB4TA D System diagram (2S/2M) for semi-trailer with air suspension and disc brakes
(ECU mounted at front of trailer)KB4TA D System diagram (2S/2M) for semi-trailer with mechanical suspension and disc brakes
(ECU mounted at front of trailer)

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

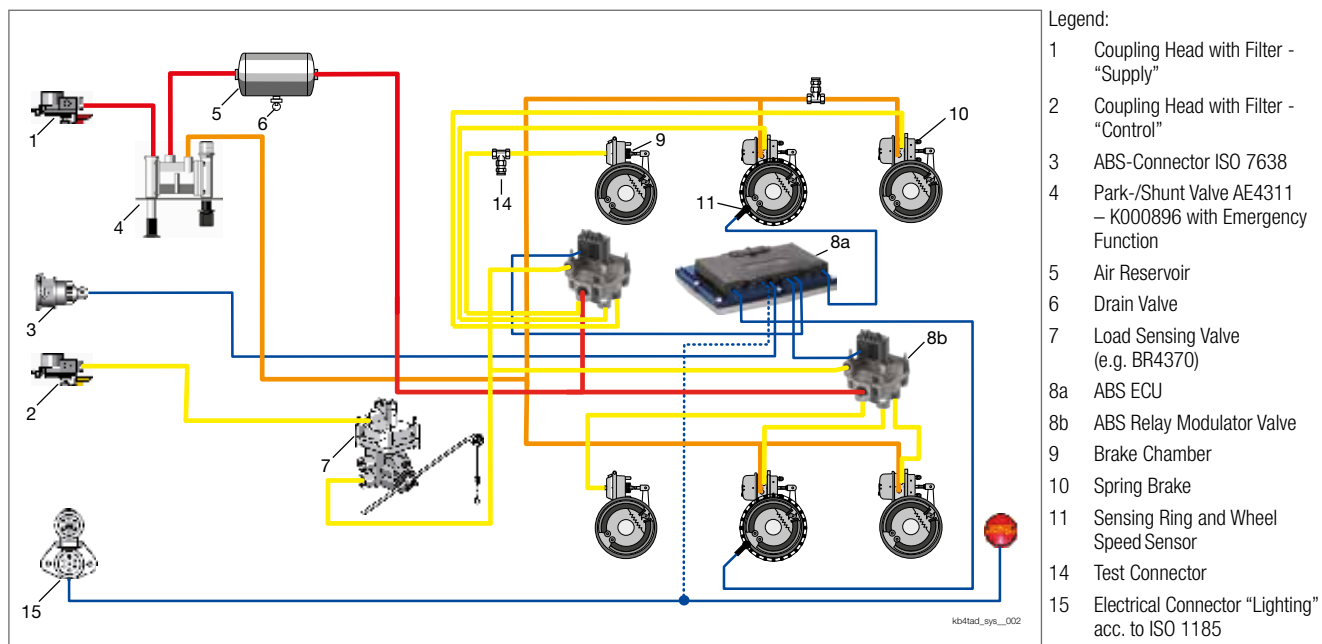
Doc. No. Y250913 (EN - Rev. 000)
July 2016

KB4TA D System Diagrams

KB4TA D System diagram (2S/2M) for semi-trailer with air suspension and drum brakes
(ECU mounted above centre of bogie)

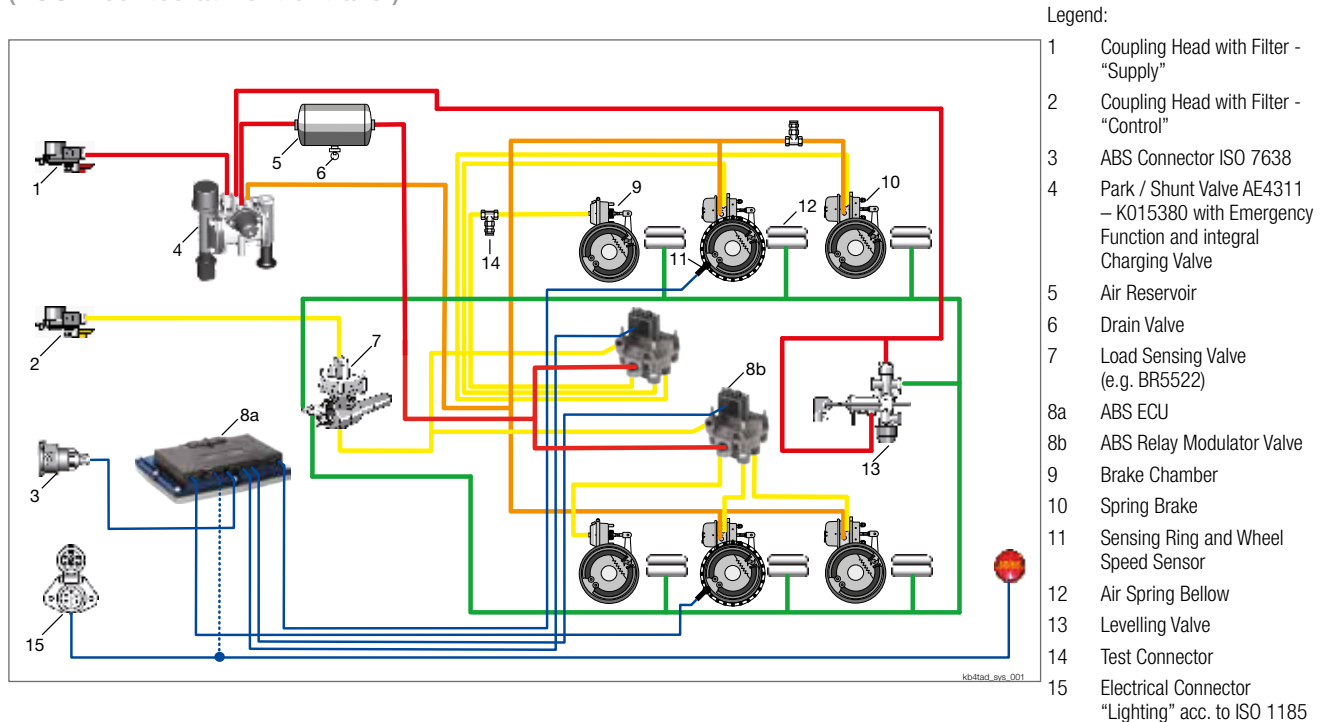
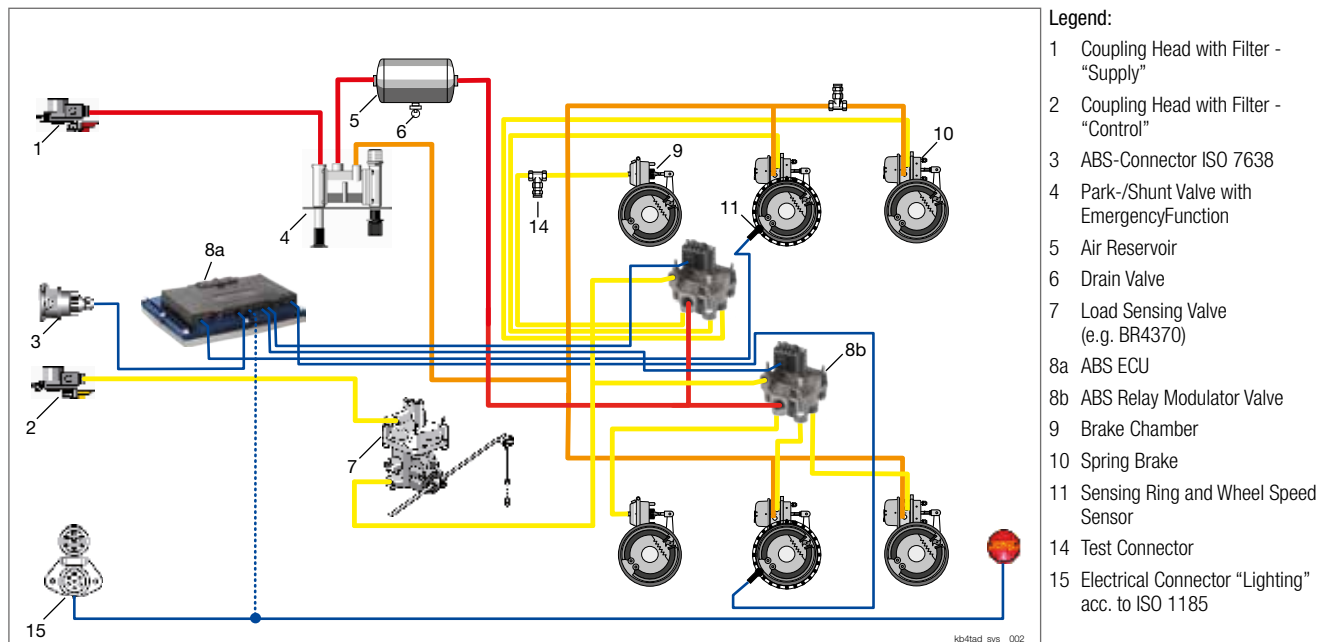


KB4TA D System diagram (2S/2M) for semi-trailer with mechanical suspension and drum brakes
(ECU mounted above centre of bogie)



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA D System Diagrams

Doc. No. Y250913 (EN - Rev. 000)
July 2016KB4TA D System diagram (2S/2M) for semi-trailer with air suspension and drum brakes
(ECU mounted at front of trailer)KB4TA D System diagram (2S/2M) for semi-trailer with mechanical suspension and drum brakes
(ECU mounted at front of trailer)

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer.

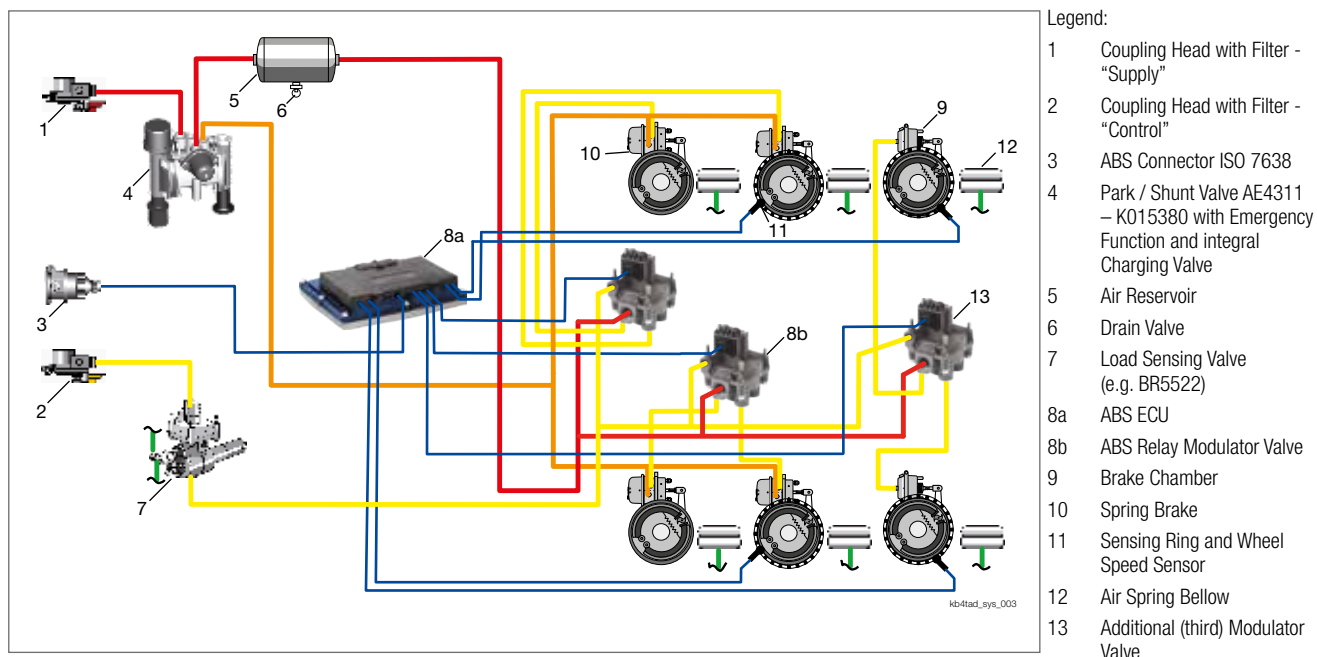
Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.

Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

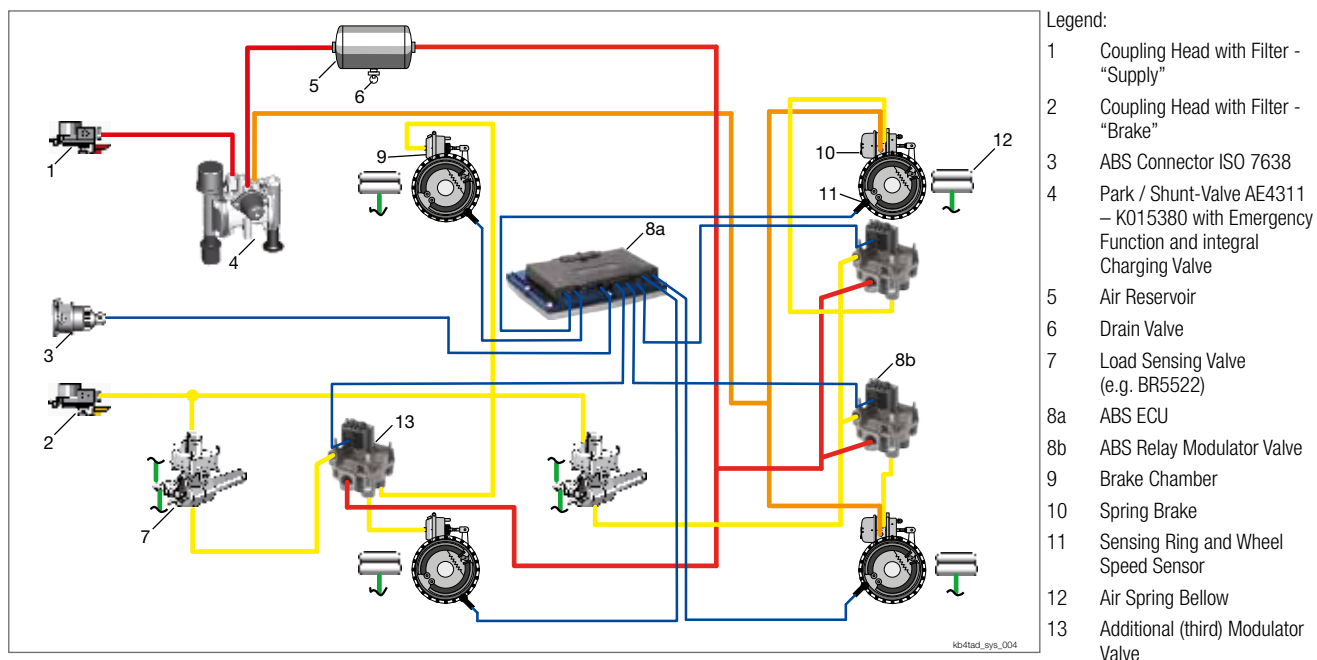
Doc. No. Y250913 (EN - Rev. 000)
July 2016

KB4TA D System Diagrams

KB4TA D System diagram (4S/3M) for semi-trailer with air suspension and drum brakes



KB4TA D System diagram (4S/3M) for full trailer with air suspension and drum brakes



The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com

KB4TA D System Diagrams

Doc. No. Y250913 (EN - Rev. 000)
July 2016

Revision Details

Rev. 000 July 2016 New document.

**KNORR-BREMSE**

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website www.knorr-bremseCVS.com for full Disclaimer. Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out. Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring. Knorr-Bremse Systeme für Nutzfahrzeuge GmbH · Moosacher Straße 80 · 80809 Munich · Germany · Tel: +49 89 3547-0 · Fax: +49 89 3547-2767 · www.knorr-bremse.com · www.knorr-bremseCVS.com



**Knorr-Bremse Systeme für
Nutzfahrzeuge GmbH**

Moosacher Straße 80
80809 München
Deutschland
Tel: +49 89 3547-0
Fax: +49 89 3547-2767

SOE-EUROPE@KNORR-BREMSE.COM
WWW.KNORR-BREMSECVS.COM



Knorr-Bremse Group

The information contained herein is subject to alteration without notice and therefore may not be the latest release. Please check our website www.knorr-bremseCVS.com for the latest update or contact your local Knorr-Bremse representative. The figurative mark "K" and the trademarks KNORR and KNORR-BREMSE are registered in the name of Knorr-Bremse AG. Additional terms and conditions apply; please refer to our website knorr-bremseCVS.com for full Disclaimer.

Note: If service work is carried out on a vehicle based on information provided herein, it is the responsibility of the workshop to ensure the vehicle is fully tested and in full functional order before the vehicle is returned into service. Knorr-Bremse accepts no liability for problems caused as a result of appropriate tests not being carried out.

Copyright © Knorr-Bremse AG - all rights reserved, including industrial property rights applications. Knorr-Bremse AG retains any power of disposal, such as for copying and transferring.