

Park/Shunt Valves with Integrated Emergency Function

Function

The **Park/Shunt Valve AE431** is used on trailers that are equipped with spring brakes. It is connected to the supply line (red) and enables the manual release and application of the trailer spring brakes. The AE431 valve's emergency function ensures that, in the event of loss of pressure in the supply line (red) resulting from uncoupling or failure of the supply line whilst driving, the trailer's spring brakes will automatically be applied by exhausting their air supply and not by applying the trailer's service brakes as with traditional relay emergency valves (REVs). This means there is no longer a need for a separate relay emergency valve and ensures that the trailer is safely parked using the spring brakes, especially when the air pressure depletes.

An additional benefit of this functionality is that the spring brakes are automatically applied every time the trailer is uncoupled. This helps the spring brakes to retain their output force since the springs do not remain compressed for long periods of time.

This feature also reduces the possibility of air leakage when the trailer is uncoupled since, in contrast with trailers with a REV, nearly all pipes and hoses are exhausted.

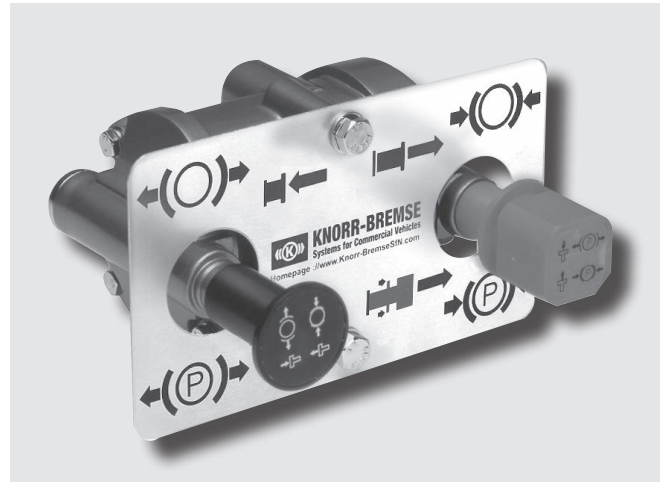
Some variants of the Park/Shunt Valve are available with an integrated charging valve and push-to-connect fittings. This means that these valves have two additional delivery ports, e.g. for the air suspension which will simplify the piping work.

The charging valve ensures the priority charging of the brake reservoir before supplying pressure to the auxiliary circuit (air suspension). In the event of pressure loss in the brake system or auxiliary circuit the valve will protect the pressure in the intact circuit.

Both knobs of the AE431 control the spring brakes:

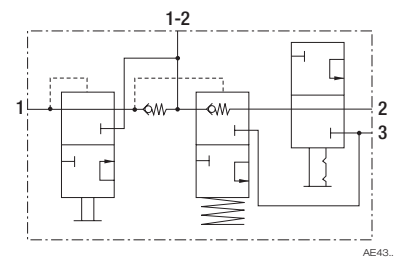
- The red knob is used to operate the parking brake. It has a safety function incorporating a locking sleeve that protects against unintentional operation.
- The black knob is used for manoeuvring the uncoupled trailer. However, in contrast with conventional release valves, it operates the spring brakes. It can only be pushed in when the trailer is uncoupled and re-connection of the supply line (red) will cause it to pop out automatically returning it to the driving position.

The mounting plate Z006845 (see page 2) explains the operation of the two knobs and can be ordered separately.

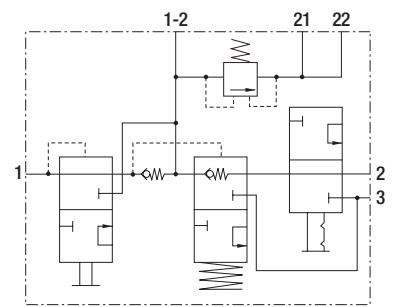


Standard Symbol as DIN ISO 1219

Without integrated charging valve



With integrated charging valve



Park/Shunt Valves with Integrated Emergency Function

Technical Features

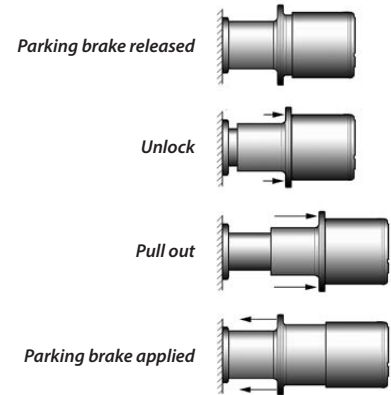
Maximum Operating Pressure: 10 bar
 Operating Temperature Range: -40 °C to +80 °C
 Weight: 1.45 kg approx.

Charging Valve function:
 Opening Pressure: 6.0 bar
 Closing Pressure: 5.2 bar

Service Brake Priority:
 When charging the trailer's air systems the service brake reservoir is given priority up to a pressure of 3.0 bar.

Emergency function:
 In the event of a pressure drop at port 1 below 2.6 bar, the spring brakes are automatically applied.

Operation of the parking brake - red knob

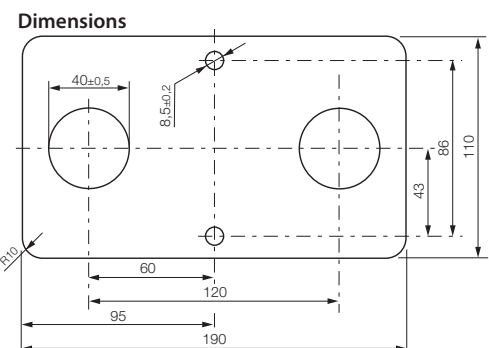
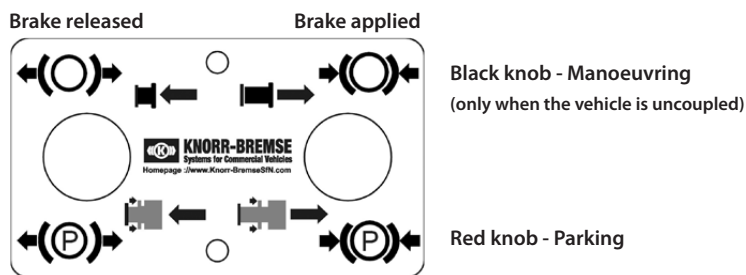


Range Overview

Part No.	Type No.	Air Ports			Remark	Charging Valve	Fittings supplied (push to connect)
		1, 1-2,	21, 22	2			
K015849	AE4311	M16x1.5	-	M22x1.5	With rubber flap	No	No
K015380		M16x1.5	M16x1.5	M22x1.5		Yes	Yes
K020123		PTC 8x1	PTC 8x1	PTC 12x1.5			

Port	Use for	Thread	Push-to-Connect Fittings to suit pipe size
1	Supply (from red supply line)	M16x1.5 - DIN 3852	8x1
1-2	Supply/delivery (from/to reservoir)		
2	Delivery (to spring portions of Spring Brakes)	M22x1.5 - DIN 3852	12x1.5
3	Exhaust	-	-
21	Delivery (to auxiliaries)	M16x1.5 - DIN 3852	8x1
22	Delivery (to auxiliaries)		

Mounting Plate (Part No. Z006845)

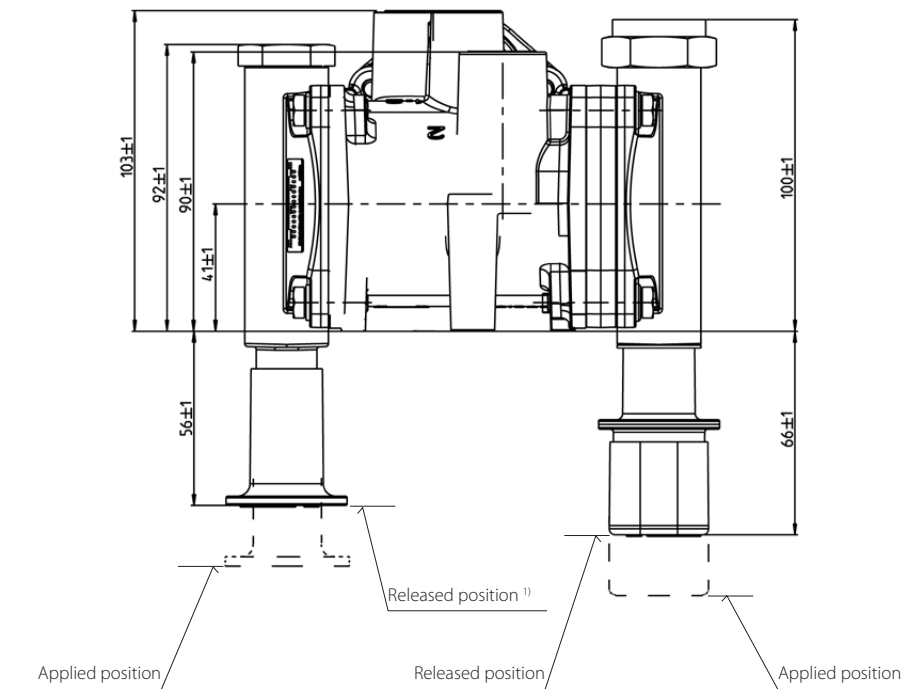
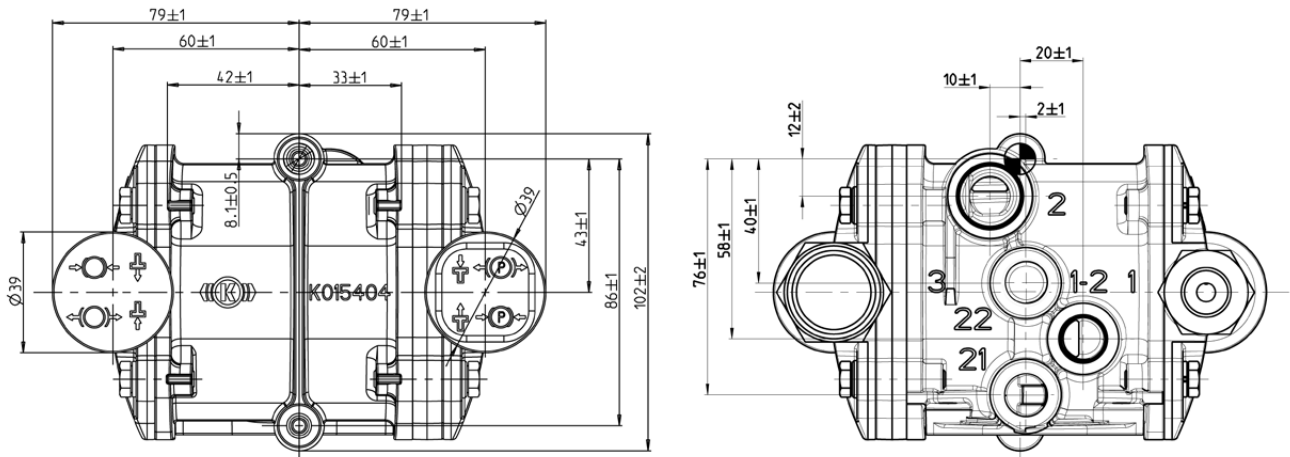


Service Parts

Blanking Plug for 8 mm pipe (Port 21 or 22, PTC) K064101

Dimensions

AE4311 – K015849

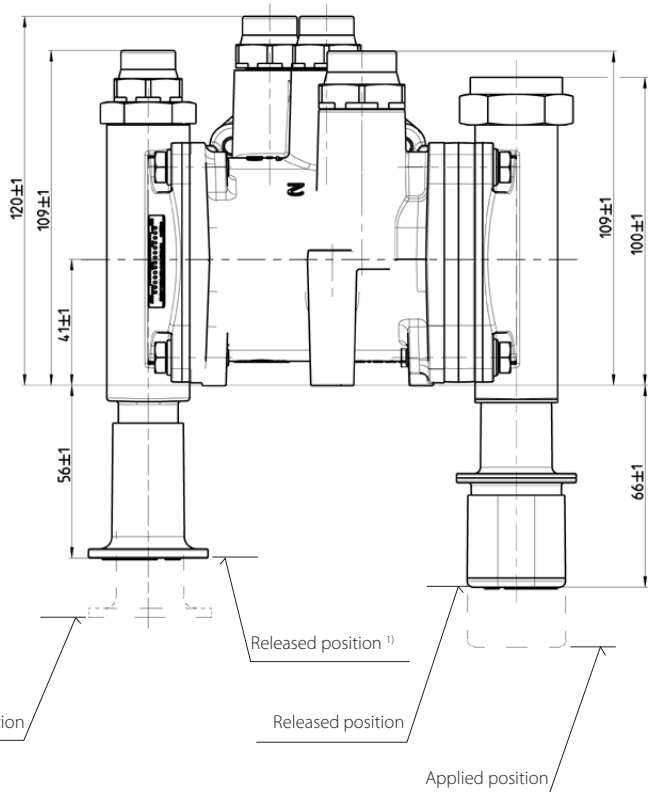
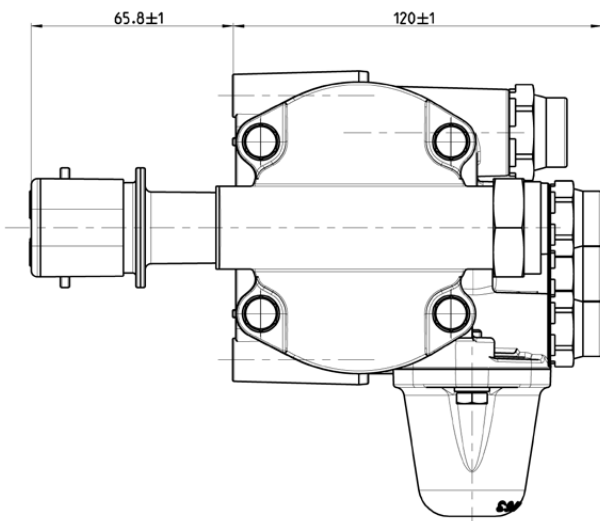
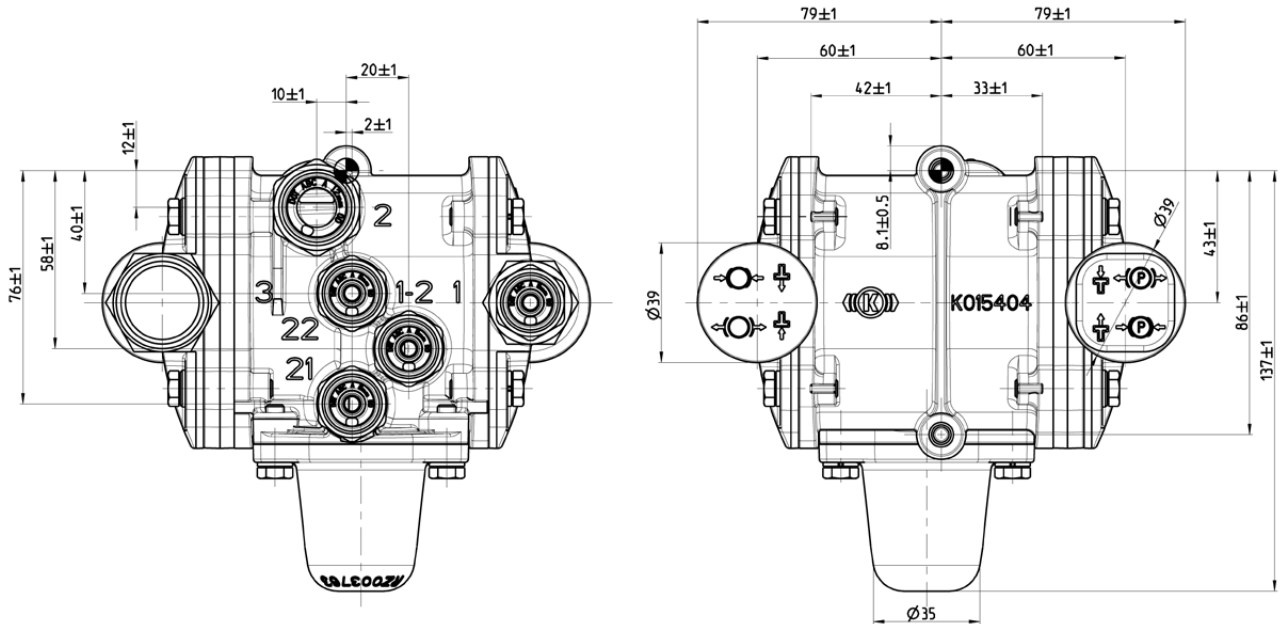


Air ports:

- 1 = Supply (from red supply line)
- 1-2 = Supply/delivery (from/to reservoir)
- 2 = Delivery (to spring portions of Spring Brakes)
- 3 = Exhaust

¹⁾ For the black knob:
only possible when the supply line (red) is not pressurised

AE4311 – K020123



Air ports:

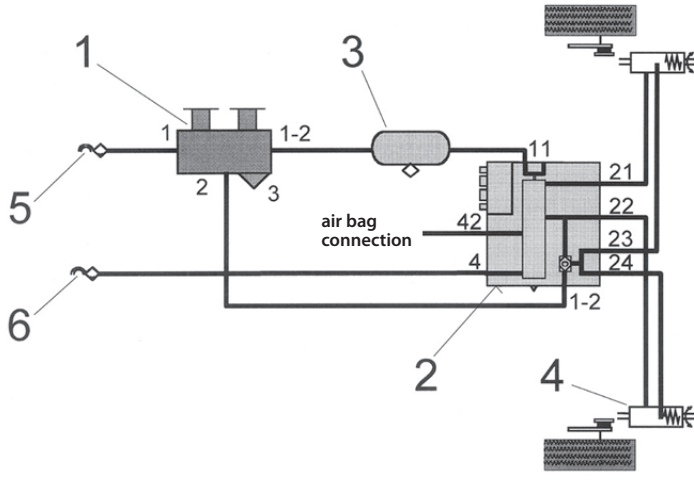
- 1 = Supply (from red supply line)
- 1-2 = Supply/delivery (from/to reservoir)
- 2 = Delivery (to spring portions of Spring Brakes)
- 21 = Delivery (to auxiliaries)
- 22 = Delivery (to auxiliaries)
- 3 = Exhaust

¹⁾ For the black knob:
only possible when the supply line (red) is not pressurised

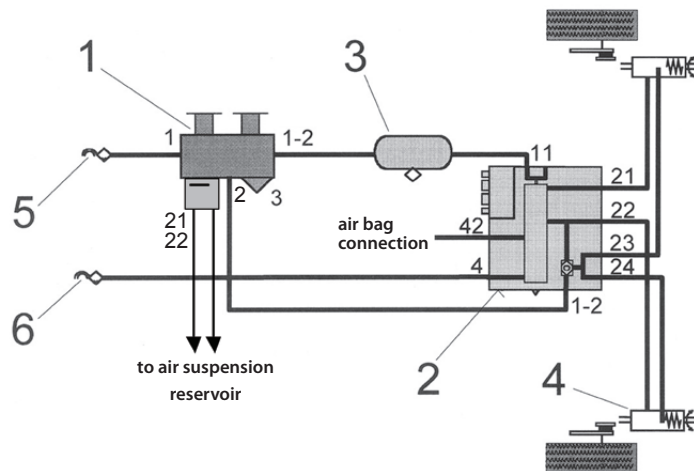
Park/Shunt Valves with Integrated Emergency Function

Installation example AE4311 with EBS

Park / Shunt Valve without Integrated Charging Valve



Park / Shunt Valve with Integrated Charging Valve



Item	Designation
1	Park / Shunt Valve with integrated emergency function
2	TEBS / TEBS G2 brake module
3	Reservoir
4	Spring Brake Actuator
5	Coupling Head with filter. Supply - Red
6	Coupling Head with filter. Control - Yellow

Revision Details		
Rev. 002	April 2019	New Layout



Knorr-Bremse Group

Knorr-Bremse Systems for Commercial Vehicles

Moosacher Strasse 80 | 80809 Munich | Germany
Tel: +49 89 3547-0 | Fax: +49 89 3547-2767
WWW.KNORR-BREMSECVS.COM

Note

All information is subject to change. A printed version of this document may therefore not correspond to the latest revision. To obtain the latest version, please visit our website www.knorr-bremseCVS.com or contact a Knorr-Bremse representative in your area.

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.

Up-to-date information on our products can be found on our website www.knorr-bremseCVS.com

Disclaimer

The information contained herein is intended for the exclusive use of trained persons within the commercial vehicle industry, and must not be passed on to any third party. All recommendations regarding products and their servicing or usage are with reference to Knorr-Bremse products and should not be considered applicable to products from other manufacturers.

This information does not purport to be all-inclusive and no responsibility is assumed as a result of its use. We cannot accept any liability nor offer any guarantee regarding data accuracy, completeness or timeliness.

The information does not represent any guarantee or ensured characteristics of the Products or Systems described. No liability can be accepted based on the information, its use, recommendations or advice provided. In no event may we be held liable for any damage or loss except in the case of wilful intent or gross negligence on our part, or if any mandatory legal provisions apply.

This disclaimer is an English translation of a German text, which should be referred to for all legal purposes. Any legal disputes arising from the use of this information shall be subject to German law.