
# KAITAI(KT)ABS PRODUCT INSTRUCTION

E24 10R06/02 5132 00

# 目录

# 1、Introduction of KT-ABS

ABS is the abbreviation of Anti-lock Braking System. It can monitor and control the degree of slippery in the direction of wheel rotation during braking period, and prevent wheel locking due to excessive braking force (especially on slippery roads). With those operation, making full use of the friction between the ground and the tires for braking and maintain vehicle stability.

In a word, ABS can calculate the slip rate of the current vehicle based on the real-time wheel speed of the tires. When the detected slip rate exceeds the threshold, the brake air pressure is adjusted through the ABS relay valve to maintain the maximum braking force in real time rapidly, to ensure the stability and safety of the vehicle.

Through experiments and comparisons with actual vehicle conditions, trailers equipped with ABS systems have the following advantages:

① Maintain vehicle stability during emergency braking;

② It can maximize the use of tire adhesion to maintain the optimal braking distance;

③It can avoid tire wear caused by wheel locking.

In order to ensure the driving safety of various kind of trailers, KT-ABS has multiple configuration modes, which are suitable for all Chinese road conditions and meet the requirements of different manufacturers.

# 2. System and function description

## 2.1 Main components of KT-ABS

KT-AB S mainly includes the following components:

| Part Number | Product name | Accessories | quantity | Remark |
|---|---|---|---|---|
| JDD1A1101 | KT-ABS module（JDD1A100） | Outer shell | 1 | |
| JDD1A1102 | | Electronic control unit | 1 | |
| JDD1A1103 | | Big buckle | 2 | |
| JDD1A1104 | | Small buckle | 2 | |
| JDD1A1105 | | End cap | 2 | |
| JDD1A1106 | | End cap sealing cover | 2 | |
| JDD1A1107 | | Plastic buckle bag | 2 | |
| JDD1A1108 | | Blockages | 4 | |
| JDD1A3114 | Cables | Power cable | 1 | |
| JDD1A3103 | | Wheel speed sensor extension cable | 4 | |
| JDD1A3101 | | Fault alarm lamp | 1 | |
| JDD1A2200 | Valve | The ABS relay valve | 1 | |
| JDD1A2301 | joint | transit joint | 7 | |
| JDD1A2302 | | transit joint | 1 | |
| JDD1A2303 | | plug | 1 | |

## 2.2 Power supply

KT-ABS operates on 24V power supply. Kaitai uses a 5-pin ISO7638 power connector as the basic power supply.

## 2.3 ABS relay valve

The "M" in "4S2M" or "2S2M" in the ABS system configuration refers to the number of Abs relay valve in the ABS system. This is a regulator, the ABS valve adjusts the internal intake valve and exhaust valve to achieve increase pressure, maintain pressure and reduce pressure to control the trailer's brake pressure during the ABS cycle.

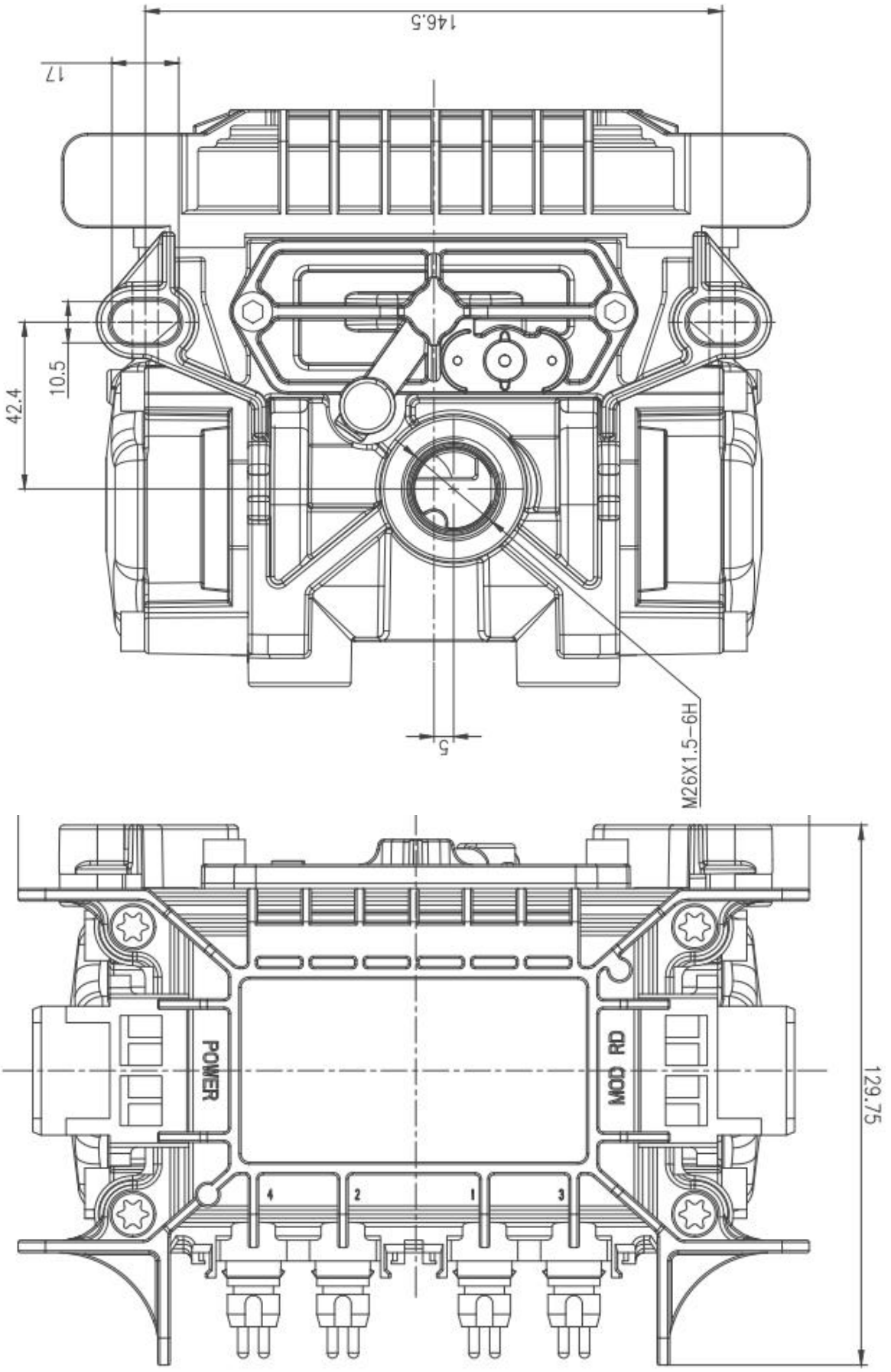
## 2.4 Indicator lamp

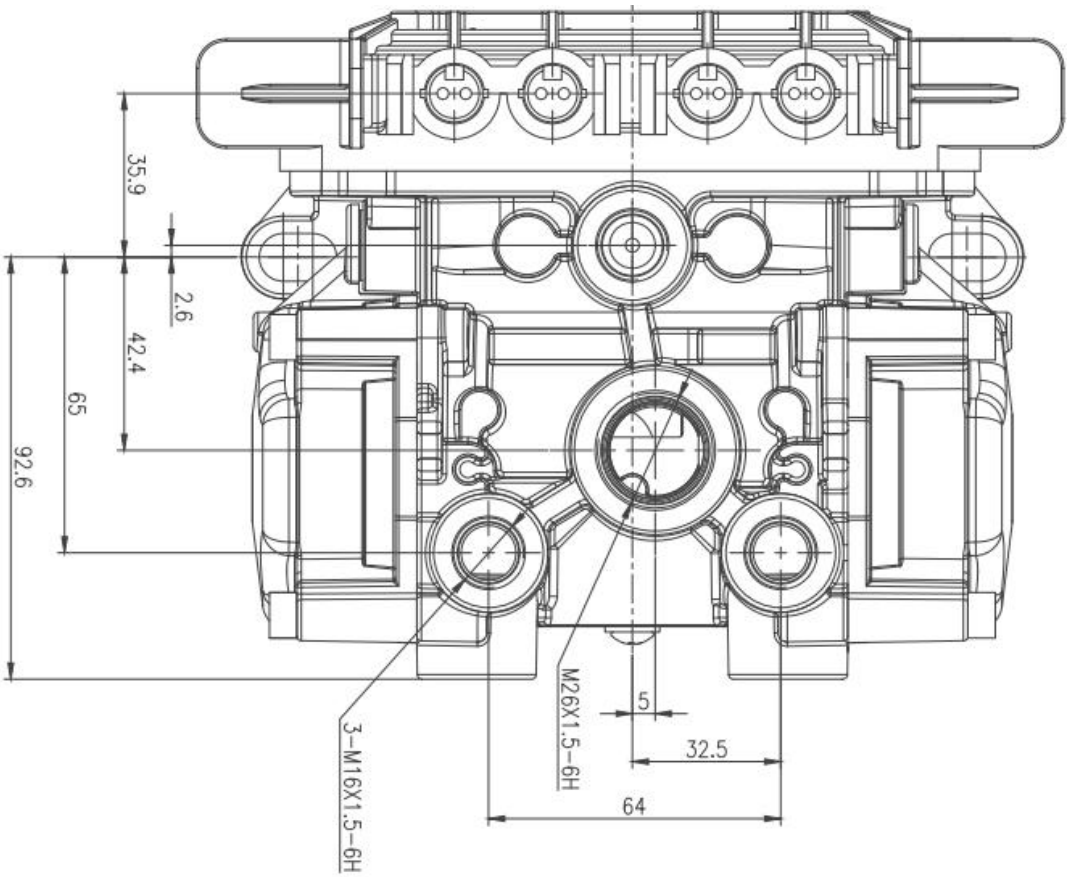
The indicator lamp can notify customers whether the KT-ABS is working properly and can be used as a flash code diagnostic tool.

# 3. System installation

## 3.1 Installation of ECU/valve assembly

The ECU assembly should be fixed at a suitable position on the frame and connected firmly using bolts (with spring washers). The air pipes and wires connected to the ECU should be routed properly to avoid entanglement and large bends. Attached is the external dimension drawing:


146.5
17
10.5
42.4
5
M26X1.5-6H
POWER
MOD RD
4
2
1
3
129.75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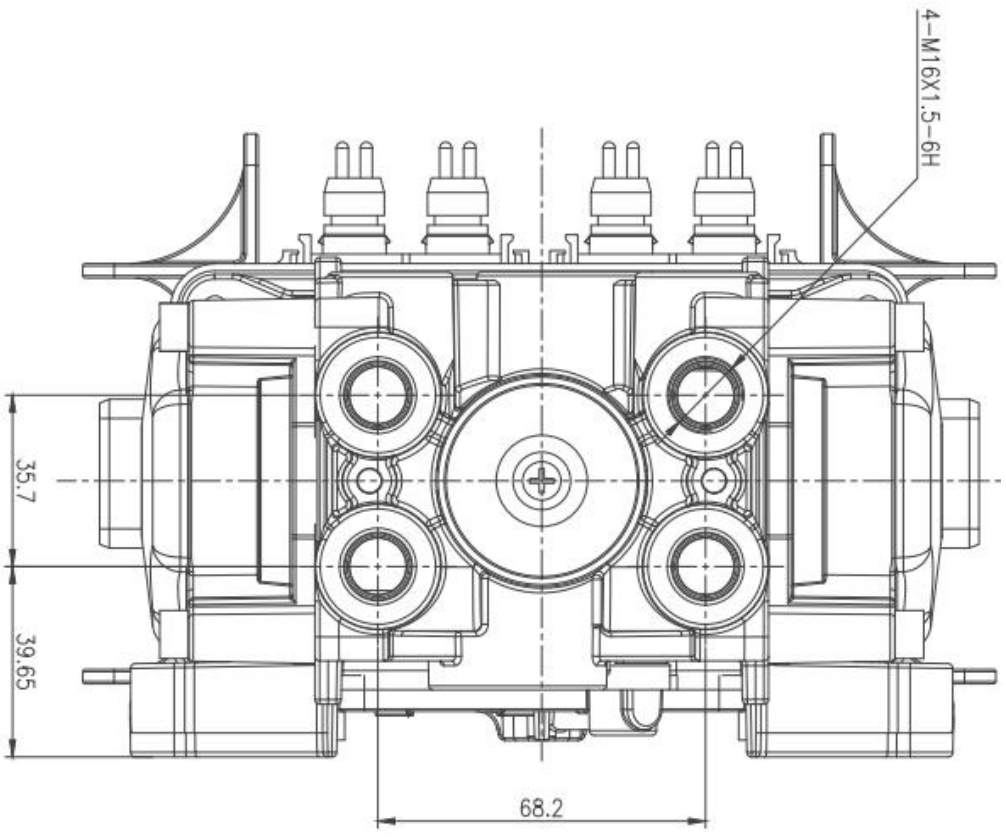
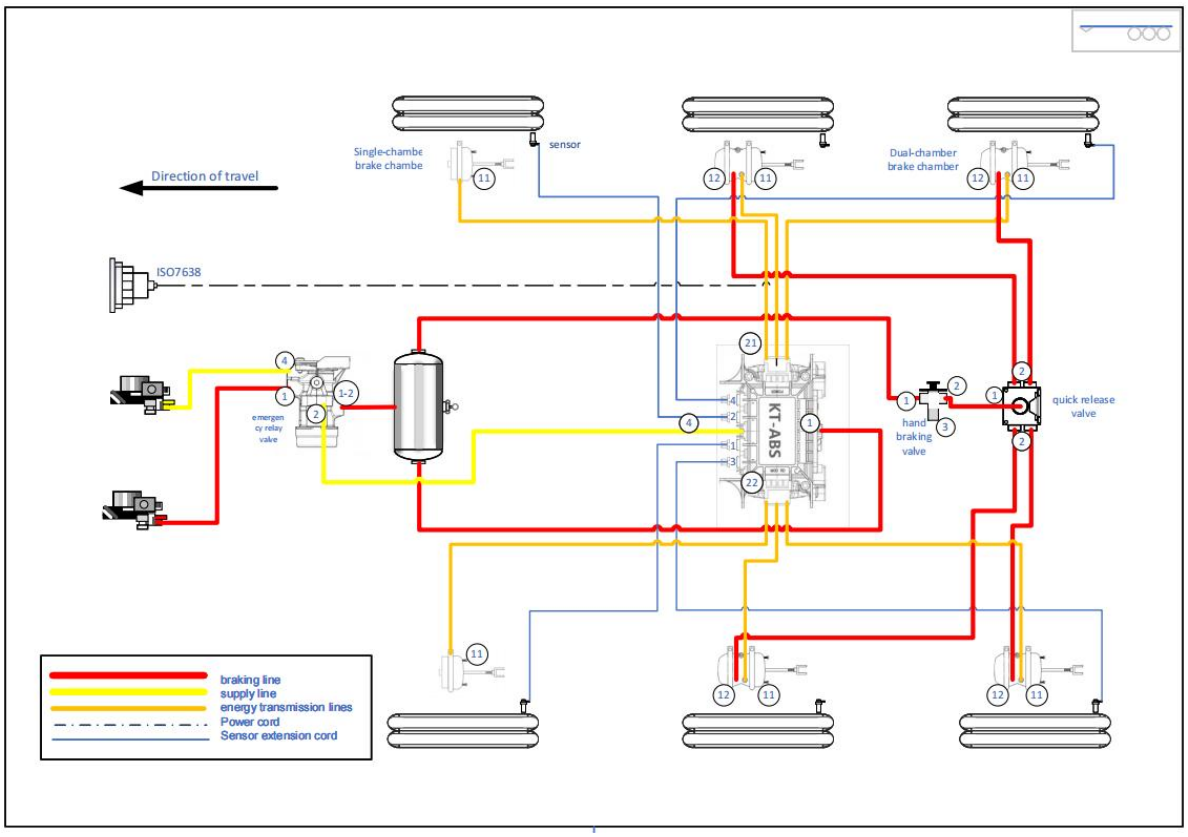
2.6
42.4
65
92.6
3-M16X1.5-6H
M26X1.5-6H
5
32.5
64


4-M16X1.5-6H
35.7
39.65
68.2

## 3.2 Installation of KT-ABS relay valve and pipeline circuit

In order to ensure the operation of KT-ABS, the KT-ABS relay valve must be installed on the vehicle frame and cannot be installed on the axle. The pipeline from the KT-ABS relay valve to the brake chamber must ensure smooth gas flow. All installations should be as symmetrical as possible, including pipe length and pipe diameter.




## 3.3 Wheel speed sensor

Wheel speed sensors are generally provided by the axle factory and installed on the axle. For axles without wheel speed sensors, first step is to determine the location of the sensor, push one end into the sensor holder, and connect the other end to the ECU. To prevent dust and water entering the connector, it should use a protective cover to protect the

connector.

When the sensor is pushed into the holder, the sensor needs to be equipped with a bushing, and the sensor and bushing must be coated with special grease, which prevents the sensor and bushing from sticking together. The gap between the sensor and the ring gear should be less than 0.7mm. When adjusting the sensor (if the gap is too large), do not use too much force or inappropriate tools, such as sharp corners or sharp-edged objects, which give damage to the sensor.

# 4. How to use KT-ABS

Vehicles equipped with KT-ABS are used in the same way as conventional vehicles, except that if the wheels are about to lock during braking, the KT-ABS system will automatically work and adjust the braking force to prevent the wheels from locking.

## 4.1 Maintenance

Check the integrity of the trailer's air pipe. In order to protect the braking components of the vehicle, it is recommended to install a pipeline filter on the front of the trailer and clean it regularly (it is recommended to clean it once every three months) to prevent damage to the KT-ABS from the pipeline by dirt.

If the air pipes and circuit connecting wires are seriously bent, it should be adjusted in time to prevent damage to the air pipes and wires.

Keep the sensor probe and ring gear clean which means to prevent mud, oil, and especially magnetic substances from adhering to their surfaces, which may cause sensor dysfunction or incorrect signal input to the computer and affect the normal operation of the ABS system. If you need to disassemble the wheel, be careful not to damage the surface of the ring gear.

## 4.2 Approach of checking whether ABS is working properly

You can observe the KT-ABS indicator lamp to know whether the system is working properly. Turn on the ignition switch and hear the exhaust sound of consecutive 2 "pops", with the trailer ABS indicator light goes out and the system is operating well.

## 4.3 Performance of KT-ABS dysfunction

When it dysfunction, even if the system is completely shut down, the vehicle's normal braking system is still effective, and the safety loop integrated within the ECU will monitor the system in real time. When the KT-ABS system detects a fault, the fault code and fault frequency will be stored in the fault memory part of the ECU. This information can be read using diagnostic tools for quick troubleshooting.

## 4.4 Precautions for using KT-ABS

**● It is strictly forbidden to use water to flush the ECU**

**● Turn off the power when disassembling and assembling system components**

**● KT-ABS must be disconnected when charging the battery at high voltage or welding the vehicle**

**● When the KT-ABS indicator lamp is damaged or indicate a fault, you should contact the KT after -sales service station in time or refer to the fault code for inspection**

# 5. Dysfunction diagnosis

If there is a fault in the system, the KT-ABS indicator light starts to blink, and different times of blinks refers to different faults. Below with blink code table.

● The indicator lamp flashes three times in succession to indicate the current electrical fault.

● The indicator lamp flashing twice in succession indicates a signal fault detected before stopping.

● Only display one fault code of one component at a time

● If it shows sensor electrical is dysfunction, check whether there is a short circuit or open circuit in the sensor and connecting wire. If everything is well, the ECU may be damaged.

● If it shows a ABS relay valve dysfunction, check whether there is a short circuit or open circuit in the ABS relay valve, and whether the pins of the ECU and the ABS relay valve are in good contact. If everything is well, the ECU may be damaged.

●If it shows the power supply failure which indicates that the system power supply voltage is too high or too low. If a signal failure is displayed, check whether the gap of the sensor is too large, whether the ring gear is installed in place, whether the ring gear is damaged, whether the ring gear is too dirty, whether the sensor is firmly installed, and it needs to be powered on again after adjustment and repair. When the vehicle speed can be over than 10km/h and the indicator lamp is off, it indicates faults have corrected. If the indicator lamp is still on which represent faults still exists, it may be cause by damaged wheel speed sensor or damaged ECU.

● When internal fault is displayed, first step is to check if ISO7638 (PIN1) is powered on. If it is power on, the ECU is damaged.

Notice:

When the KT-ABS installed on the vehicle is dysfunction or has any questions, you can directly contact our after-sales service.

# Attachment 1: KT-ABS flash code table

| Blink code table | |
|---|---|
| 3 | Sensor port 1 (BU1) |
| 4 | Sensor port 2 (YE1) |
| 5 | Sensor port 3 (BU2) |
| 6 | Sensor port 4 (YE2) |
| 10 | The ABS relay valve |
| 14 | power supply |
| 15 | ECU |