



东风乘用车

制动系统



东风乘用车

Brake System



- 1、熟悉E70制动系统的组成和结构特点
- 2、能对E70制动系统进行故障诊断与排除
- 3、掌握E70制动系统各部件的拆装更换方法及注意事项

Objectives



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1. Familiar with the composition and structural characteristics of the E70 brake system
2. Troubleshoot the E70 brake system
3. Master the removal and refitting and replacement methods and precautions of the E70 brake system

一、E70制动系统的结构特点

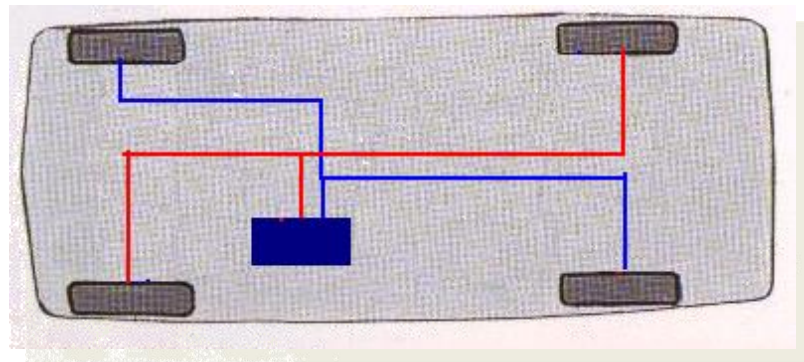


1、行车制动系统形式

采用液压双回路X型制动系统



液压制动系统



X型制动管路分布

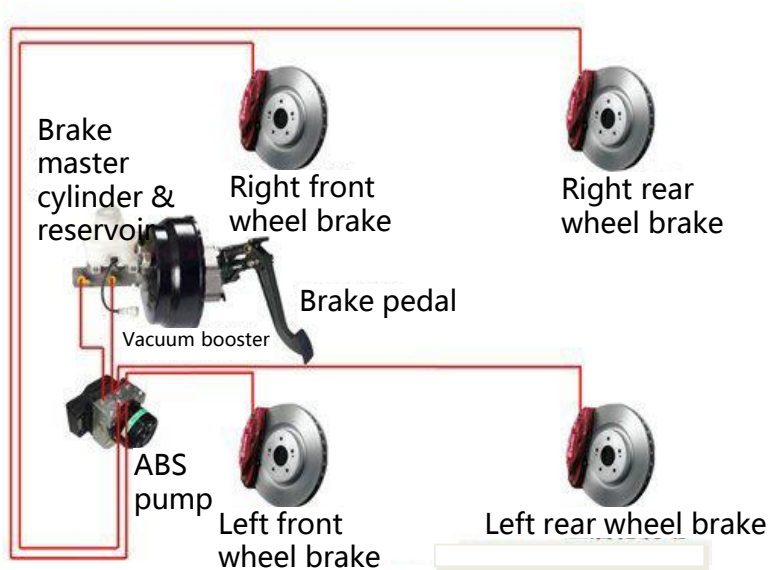
I. Structural characteristics of E70 brake system



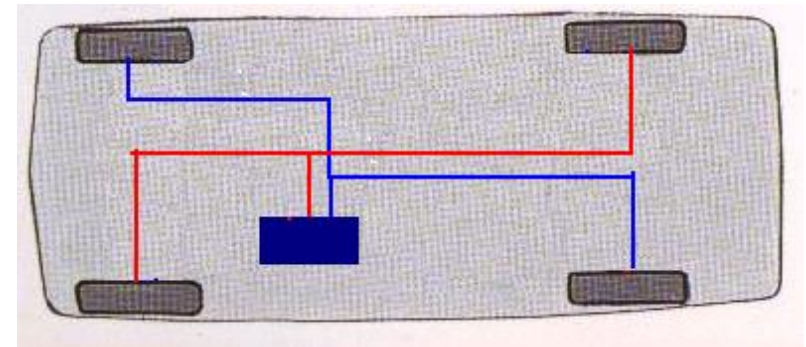
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1. Type of service brake system

Hydraulic double circuit X-type brake system



Hydraulic brake system



X-type brake pipeline layout

一、E70制动系统的结构特点



2、制动器形式

前后制动器均为盘式制动器



前制动器



后制动器

I. Structural characteristics of E70 brake system



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2. Type of brake

Front and rear disc brakes



Front brake



Rear brake



一、E70制动系统的结构特点

3、驻车制动形式

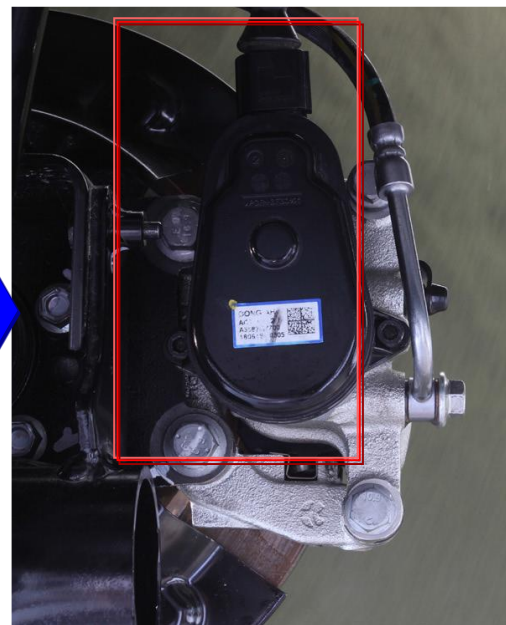
采用EPB电子驻车制动系统



电子驻车制动按键



电子驻车制动控制器



驻车制动电机

I. Structural characteristics of E70 brake system



3. Type of parking brake

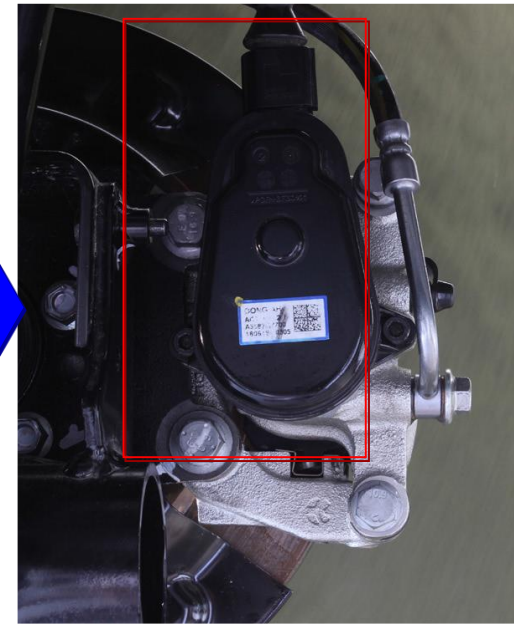
EPB



EPB button



EPB control unit

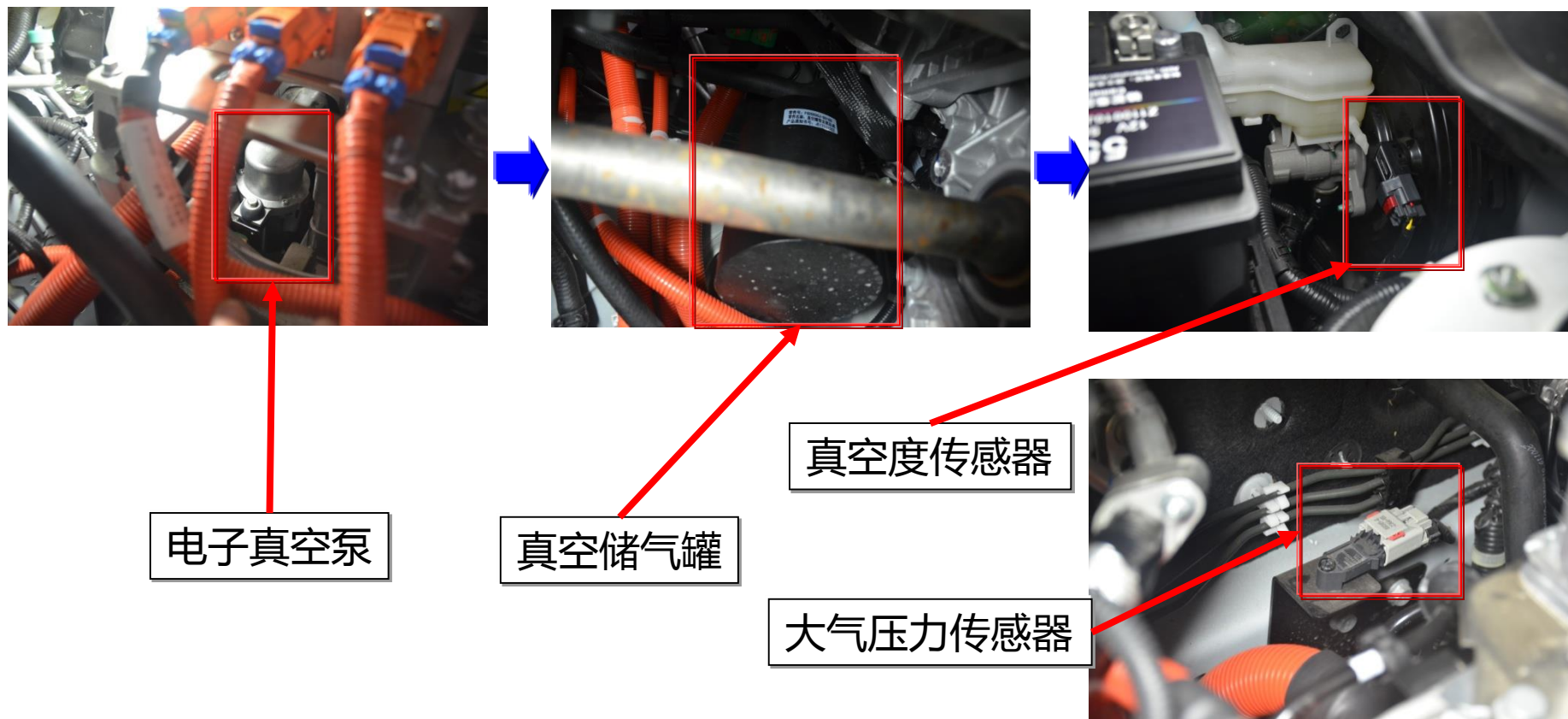


Parking brake motor

一、E70制动系统的结构特点

4、真空助力形式

采用真空助力器+电子真空泵助力形式

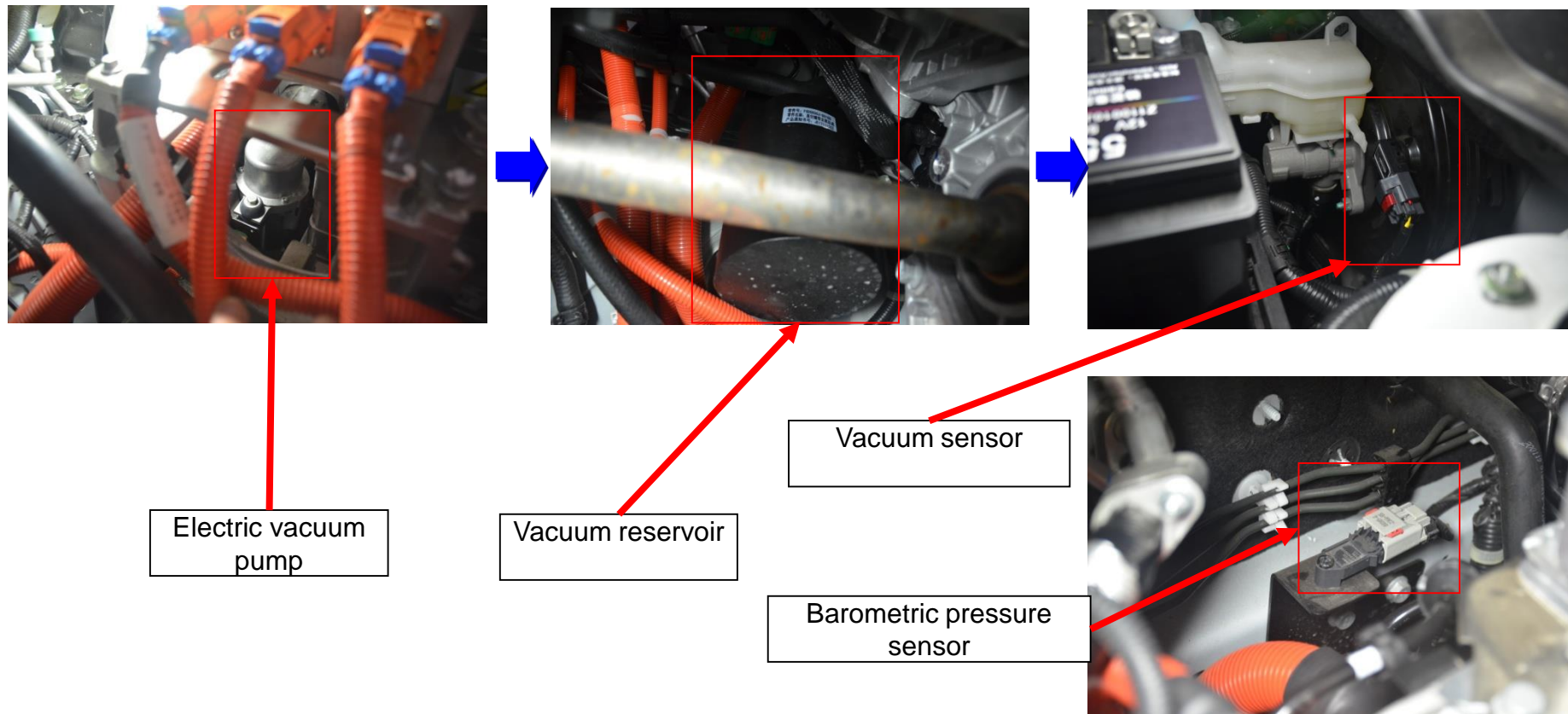


I. Structural characteristics of E70 brake system



4. Type of vacuum booster

Vacuum booster + electric vacuum pump booster



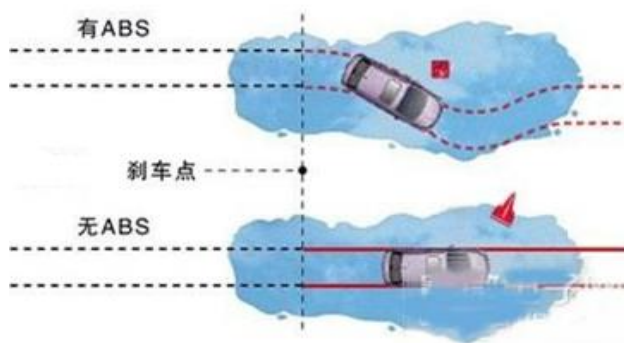
一、E70制动系统的结构特点



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5、制动辅助系统

采用ABS+EBD配置（出租车）



制动车辆控制更可靠

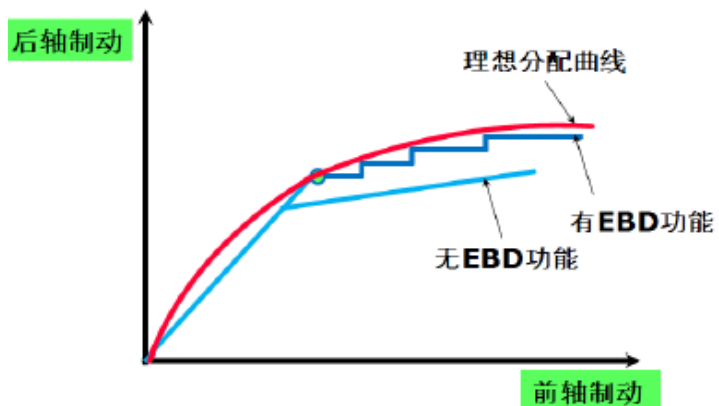
国际先进ABS



EBD



制动更平稳



制动距离最大缩短，更安全

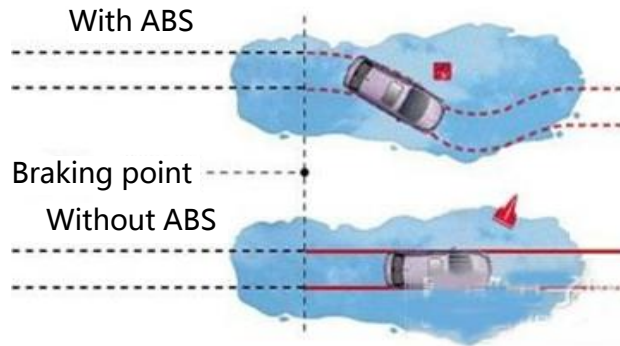
I. Structural characteristics of E70 brake system



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5. BAS

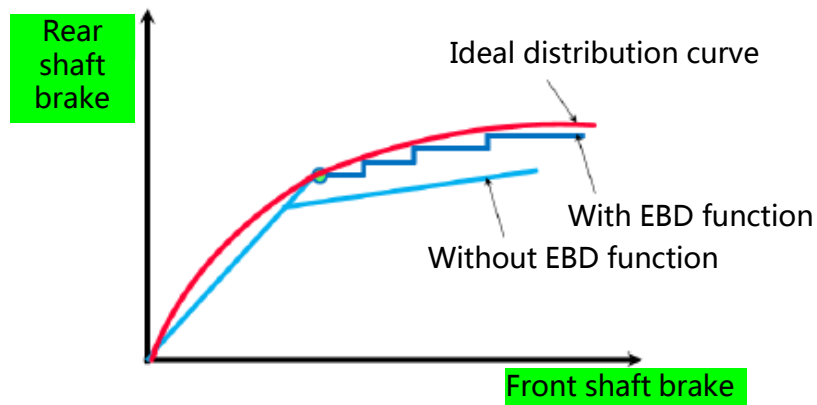
ABS+EBD (taxi)



International
advanced ABS



EBD



Brake vehicle control is more reliable

Braking is smoother

The braking distance is shortened to the maximum and is safer

一、E70制动系统的结构特点



东风乘用车

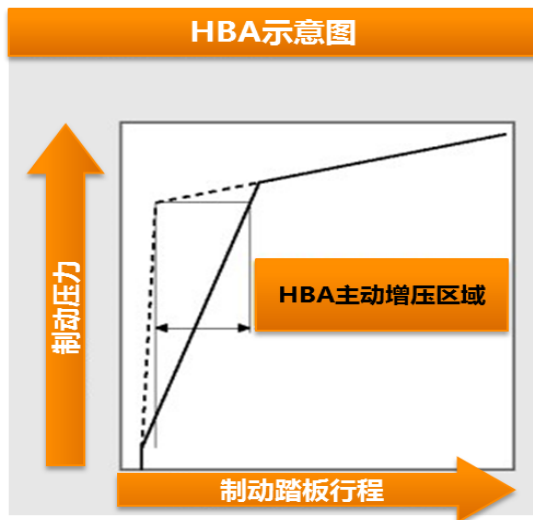
5、制动辅助系统

采用ABS+EBD+ESC配置（私家车）

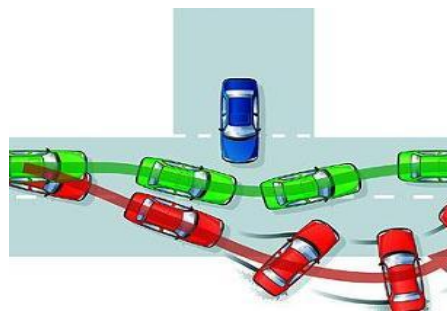
HBA液压制动辅助，通过识别驾驶员制动意图及制动力、真空度，必要时辅助驾驶员提升制动响应及制动减速度。

AYC功能借助ESC控制发动机扭矩及制动系统，在驾驶员在紧急避让时避免车辆侧滑；

HBA：在紧急制动的情况下，通过ESC主动建压，提升制动系统响应速度，快速建立制动减速度；



AYC车辆稳定性控制



I. Structural characteristics of E70 brake system



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5. BAS

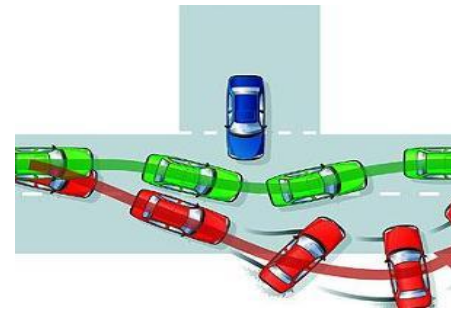
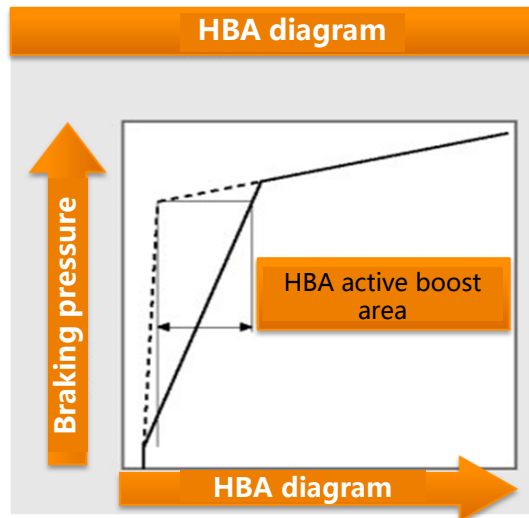
ABS+EBD+ESC (private car)

Hydraulic Brake Assist (HBA): it assists the driver to increase the brake response and brake deceleration when necessary by identifying the driver's braking intention and braking force, as well as vacuum.

Active Yaw Control (AYC): it can control the engine torque and braking system with the help of the ESC to prevent the vehicle from slipping during emergency avoidance;

HBA: In the case of emergency braking, the ESC actively builds pressure to increase the response speed of the brake system and quickly set up the brake deceleration;

AYC controls the vehicle stability.



一、E70制动系统的结构特点



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5、制动辅助系统

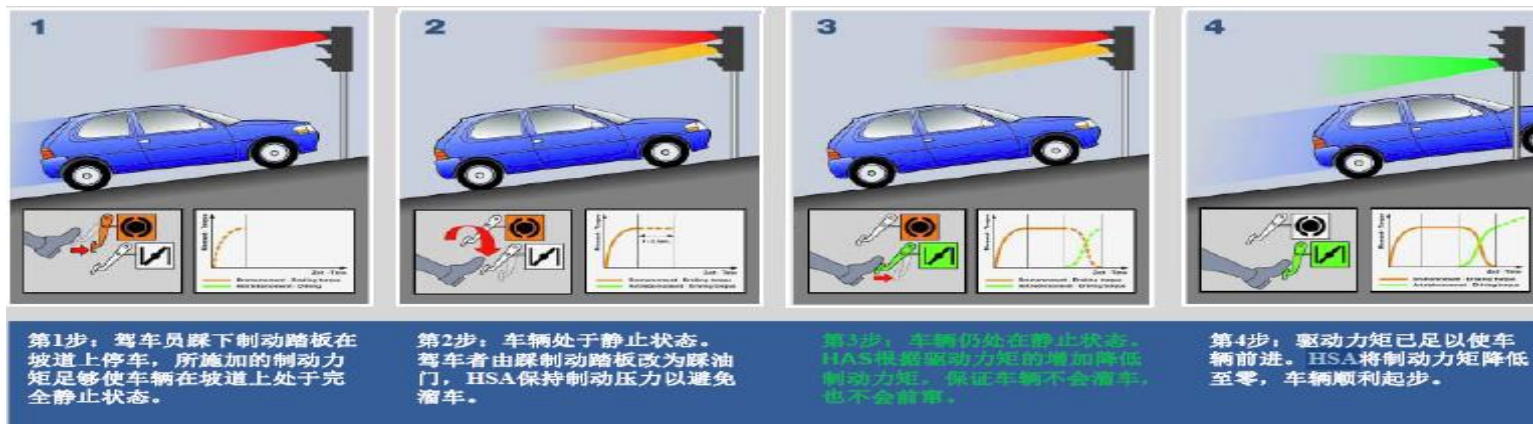
采用ABS+EBD+ESC配置（私家车）

TCS功能保证湿滑路面起步/加速时，控制驱动轮输出扭矩，防止打滑，保证行驶方向稳定性。

HAS功能，辅助驾驶员轻松、安心完成坡道起步驾驶

TCS：监控每一个车轮的信号，并通过对制动压力和（或）发动机扭矩的控制，将驱动轮的滑移保持在使车辆的稳定性和加速度保持在最优的状态。

HAS：适用于4%-30%的坡道，使车辆在坡道上保持1.5-2秒，新手也能轻松驾驭上坡停车起步。



I. Structural characteristics of E70 brake system



5. BAS

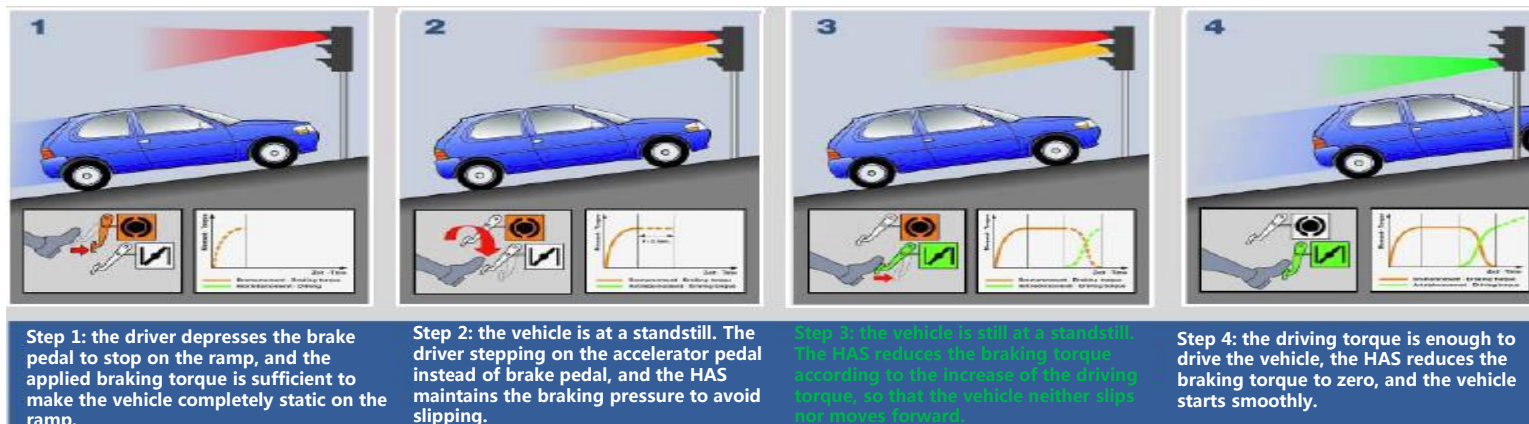
ABS+EBD+ESC (private car)

The **Traction Control System (TCS)** ensures that the output torque of the drive wheel is controlled during the start/acceleration on the slippery road to prevent slipping and to ensure the stability in the driving direction.

Hill Start Assist (HAS): it assists the driver to complete the hill start in an ease manner.

TCS: It monitors the signal of each wheel and controls the brake pressure and/or engine torque to maintain the slip of the drive wheel to the extent that the stability and acceleration of the vehicle are kept in an optimal state.

HAS: It is suitable for 4%-30% hill. The vehicle can stay on the hill for 1.5-2 s, even if a novice driver can easily start the vehicle on uphill.



二、维修注意事项



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- 推荐的制动液是“DOT4”。
- **注意不要将制动液溅到漆面上，否则会损坏油漆。如果制动液溅到漆面上，请立即用水清洗干净。**
- 将起动开关转到ON位置,会听到真空泵电机工作噪声,或者可能感受到制动踏板轻微振动，这是正常状态（ABS自检）。

II. Precautions for Service



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- The recommended brake fluid is "DOT4" .
- Take care not to spill the brake fluid onto the paint; otherwise it will damage the paint. If this happens by accident, wash it immediately with water.
- Turn the starting switch to the ON position, you will hear the working noise of the vacuum pump motor, or you may feel a slight vibration of the brake pedal, which is normal (ABS self-test).



对E70的制动系统结构进行认知，必要时进行拆装



Cognize the E70 brake system structure, and remove and refit it if necessary.