

# Component Procedures: Antilock Brakes / Traction Control Systems

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# Component Procedures: Antilock Brakes / Traction Control Systems

## Parts and Labor (itype\_189)

### Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Diagnose/Test	System, Test	B	1.0	0.0

### Identification of System (Article 2045016)

#### IDENTIFICATION OF SYSTEM

Vehicles equipped with the Teves Mark IVG antilock brake system can be identified by the presence of the Hydraulic Control Unit

(  
HCU  
)

located under the hood near the  
power brake booster

### System Coverage (Article 2045017)

#### SYSTEM COVERAGE

This information covers the Teves Mark IVG Antilock Braking System found on the 1999 Jeep Wrangler.

### Anti-Lock Brake System (ABS) (Article 2045657)

#### Non Standards

- ABS Description and Operation (2045671)
- Diagnostic Trouble Codes (2045675)
- System Components (2045676)
- Wheel Speed Sensors and Tone Wheel (2045677)

### Anti-Lock Brake System (ABS) (Article 2047912)

#### Non Standards

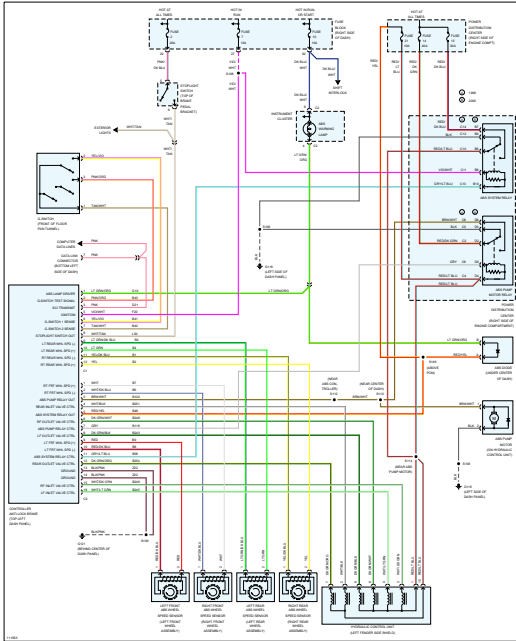
- Schematic Diagrams (2047913)
- Wiring Diagrams (2047914)

### Anti-Lock Brakes (Article 11711)

#### Anti-Lock Brakes

Interactive Color (Non OE) diagrams for model years 2001 and older use a universal ground location diagram.

[Click here for the diagram.](#)



## Servicing Sub-Assemblies (Article 2047879)

### SERVICING SUB-ASSEMBLIES

Some components of the antilock brake or speed proportional steering system are intended to be serviced in assembly only. Attempting to remove or repair certain system sub-components may result in personal injury and/or improper system operation. Only those components with approved repair and installation procedures in the service manual should be serviced.

## Technician Safety Information (Article 2047880)

**WARNING: ENGINES PRODUCE CARBON MONOXIDE THAT IS ODORLESS, CAUSES SLOWER REACTION TIME, AND CAN LEAD TO SERIOUS INJURY. WHEN THE ENGINE IS OPERATING, KEEP SERVICE AREAS WELL VENTILATED OR ATTACH THE VEHICLE EXHAUST SYSTEM TO THE SHOP EXHAUST REMOVAL SYSTEM.**

Set the parking brake

and block the wheels before testing or repairing the vehicle. It is especially important to block the wheels on front-wheel drive vehicles; the parking brake does not hold the drive wheels.

When servicing a vehicle always wear eye protection and remove any metal jewelry such as watchbands or bracelets that might make an inadvertent electrical contact.

When diagnosing an antilock brake or speed proportional steering system problem, it is important to follow approved procedures where applicable. These procedures can be found in the service manual. Following these procedures is very important to the safety of individuals diagnostic tests.

## Vehicle Damage Warnings (itype\_16)

### VEHICLE DAMAGE WARNINGS

Before disconnecting any control module, make sure the ignition is "off". Failure to do so could damage the module.

When testing voltage or continuity at any control module, use the terminal side (not the wire end) of the connector. Do not probe a wire through the insulation; this will damage it and eventually cause it to fail because of corrosion.

Be careful when performing electrical tests so as to prevent accidental shorting of terminals. Such mistakes can damage fuses or components. Also, a second code could be set, making diagnosis of the original problem more difficult.

### ROAD TESTING A COMPLAINT VEHICLE

Some complaints will require a test drive as part of the repair verification procedure. The purpose of the test drive is to try to duplicate the diagnostic code or symptom condition.

**WARNING: BEFORE ROAD TESTING A VEHICLE, BE SURE THAT ALL COMPONENTS ARE REASSEMBLED. DURING THE TEST DRIVE, NOT TRY TO READ THE DRB III SCREEN WHILE IN MOTION. DO NOT HANG THE DRB FROM THE REAR VIEW MIRROR OR OPERATE IT YOURSELF. HAVE AN ASSISTANT AVAILABLE TO OPERATE THE DRB III**

## All Technical Service Bulletins (itype\_100)

Tsbs

- ABS System - 'No Response' Test Revisions (26-10-99E, 1999/10/01)

## Diagnostic Strategies (Article 2045070)

Non Standards

- Six-Step Troubleshooting Procedure (2045072)
- Intermittent Diagnostic Trouble Codes (2045088)
- Vehicle Preparation For Testing (2045079)

## Description of On-Board Diagnostics (Article 2045073)

Non Standards

- ABS System Description (2045080)
- Glossary of Terms (2045081)
- System Initialization (2045085)
- System Components (2045077)

## Pedal Feel/Vehicle Characteristics (Article 2045056)

PEDAL FEEL\VEHICLE CHARACTERISTICS

There are several pedal feel/vehicle characteristics that are considered normal for antilock braking that may require further explanation.

When stopping conditions activate the antilock brakes, the driver may feel some vibrations/ pulse:Pulsations in the

brake pedal

and may hear the electric solenoid valves clicking and the

pump motor

running. The vibrations/pulsations are caused by the isolating, building and decaying of

brake fluid

pressure within the

brake line

s. The

ABS

system prevents complete wheel lock-up, but some wheel slip is required for the best braking performance. This

slip may result in some tire chirping, depending on the road surface. The chirping should not be interpreted

as total wheel lock-up leaves black tire marks on dry pavement, antilock braking may leave some light marks.

At the end of an ABS stop, the ABS system may not function below 5 Km/h (3 mph). There may be a slight brake

pedal drop anytime the ABS is deactivated.

An case of braking on a bumpy surface, the ABS system may detect wheel locking tendencies due to wheel hop and

cycle ABS. In the scenario the brake pedal may pulsate with a perceived loss of deceleration. ABS braking may

also be activated at times while on dry pavement with sand, gravel, or other loose debris on the road.

It should be noted that the pulsating pedal feel characteristic will not illuminate the

brake warning indicator

s or set a diagnostic trouble code that is stored in the

Controller Antilock Brake

(

CAB

). When investigating a hard pedal feel, inspect the sensor and tone wheel teeth for chips/broken teeth,

damaged sensor pole tips, excessive runout of the tone wheel, or excessive gap.

## Displaying & Reading Trouble Codes (Article 2025517)

Non Standards

- Diagnostic Mode (2045027)
- With Manufacturer's Scan Tool (2045024)

## Clearing Trouble Codes (Article 2045025)

Diagnostic trouble codes are retained in memory until erased using the DRB, or automatically erased after 255 key cycles.

NOTE:

After repairing all existing Diagnostic Trouble Codes

(DTCs)

, clear and check for any new codes.

1. Connect the Diagnostic Readout Box

(DRB)

, or equivalent scan tool, to the data link connector located under the dash to the right of the steering column.

2. Follow scan tool prompts to erase DTCs. For more information, refer to scan tool operator's manual.

### **Scan Tool Testing (Article 2044967)**

Non Standards

- DRB III Error Messages and Blank Screen (2044973)

### **Required Tools and Equipment (Article 2045619)**

REQUIRED TOOLS AND EQUIPMENT

DRB III (diagnostic read-out box)

jumper wires

ohmmeter

voltmeter

test lamp

### **Service Manual Updates (itype\_115)**

Tsbs

- ABS System - 'No Response' Test Revisions (26-10-99E, 1999/10/01)