

## BRAKE SYSTEM

### Article Text

1991 Volkswagen Vanagon  
For Volkswagen Technical Site  
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Saturday, March 18, 2000 09:02PM

#### ARTICLE BEGINNING

1990-92 BRAKES  
Volkswagen Disc & Drum

1990-92 Passat  
1991-92 Cabriolet, Corrado, Fox, Golf, GTI, Jetta, Vanagon

#### DESCRIPTION

All models are equipped with front disc brakes. Rear brakes are either disc or drum. Parking brake acts on rear brakes and is cable-actuated. All models use pressure regulator between front and rear brake circuits to avoid rear wheel lock-up during hard braking.

A vacuum power-assist servo is used to ease brake pedal application. A vacuum check valve, located in vacuum supply hose, prevents vacuum leak off when engine is off.

#### SERVICING

Manufacturer recommends replacing brake fluid every 2 years.

#### BLEEDING BRAKE SYSTEM

CAUTION: Ensure fluid level in master cylinder is adequate at all times during bleeding procedure. Use only DOT 4 brake fluid. DO NOT use DOT 5 silicone brake fluid.

#### BLEEDING PROCEDURES

NOTE: Manufacturer recommends bleeding brake system using Pressure Bleeder (US 1116). If a pressure bleeder is not available, use standard bleeding procedure.

1) Exhaust vacuum reserve from power unit by depressing brake pedal several times. On ABS-equipped vehicles, depress brake pedal at least 20 times to relieve system pressure.

2) On all vehicles, fill master cylinder with clean brake fluid. If master cylinder was replaced, bleed master cylinder before bleeding wheel calipers. Connect bleeder hose to appropriate caliper bleeder valve. See BRAKE LINE BLEEDING SEQUENCE TABLE.

#### BRAKE LINE BLEEDING SEQUEABLE TABLE

AA

Application (1) Sequence

Cabriolet, Fox & Vanagon ..... RR, LR, RF, LF

Corrado ..... Either Front Caliper First,  
Either Rear Caliper First

Golf, GTI, Jetta & Passat

Without ABS ..... RR, LR, RF, LF

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With ABS ..... LF, RF, Either Rear Caliper First

- (1) - On all vehicles, push lever of pressure regulator in direction of rear axle when bleeding rear brakes.

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3) Submerge other end of hose in clean glass jar partially filled with clean brake fluid. Pump brake pedal several times, then hold down. Open bleeder valve. Holding pedal down, close bleeder valve. Release brake pedal. Repeat procedure until brake fluid shows no signs of air bubbles. When bleeding rear brakes, push lever of pressure regulator in direction of rear axle.

4) After bleeding ABS vehicles, turn ignition on. Allow pump to run until it shuts off. If pump runs longer than 2 minutes, allow pump to cool for 10 minutes. On all vehicles, ensure master cylinder reservoir is full.

## ADJUSTMENTS

### BRAKE PRESSURE REGULATOR

CAUTION: On all models except Vanagon, DO NOT adjust pressure regulator with brake pedal depressed.

#### Cabriolet

1) Raise and support vehicle. Attach Pressure Gauges (US 1016) to right front brake caliper and left rear brake cylinder. Bleed pressure gauge and hoses through valve on gauges.

2) Pump brake pedal several times. Press on brake pedal until reading on front gauge shows pressure given for 1st reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 1st reading in BRAKE PRESSURES TABLE.

3) Increase pressure on brake pedal until reading on front gauge shows pressure given for 2nd reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 2nd reading in BRAKE PRESSURES TABLE. If pressures are within specification, brake pressure regulator is functioning properly. If pressures are not within specification, replace pressure regulator. Disconnect gauges and bleed brakes.

#### Corrado, Golf, GTI, Jetta & Passat

1) Depress brake pedal once firmly. Release brake pedal quickly, watching for regulator lever to move when pedal is released. If regulator lever does not move when pedal is released quickly, replace regulator. If regulator lever moved, go to next step.

2) Ensure vehicle fuel tank is full, luggage compartment is empty and a driver is in driver seat. Raise and support vehicle. Using Pressure Gauges (US 1016), attach one gauge to right rear brake cylinder or caliper. If vehicle is ABS-equipped, go to next step. If vehicle is not ABS-equipped, go to step 4).

3) Using Distributor (tee) (803 611 755) and an additional 8"

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(203 mm) of brake line, connect one gauge in front of pressure regulator. Bleed pressure gauge and hoses through valve on gauges. Lower vehicle. Bounce rear of vehicle several times. Go to step 5).

4) Attach Pressure Gauges (US 1016) to left front brake caliper. Bleed pressure gauge and hoses through valve on gauges. Lower vehicle. Bounce rear of vehicle several times.

5) Pump brake pedal several times. Press on brake pedal until reading on front gauge shows pressure given for 1st reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 1st reading in BRAKE PRESSURES TABLE.

6) Increase pressure on brake pedal until reading on front gauge shows pressure given for 2nd reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 2nd reading in BRAKE PRESSURES TABLE. If pressures are within specification, brake pressure regulator is functioning properly. If pressures are not within specification, go to next step.

7) If pressure is too high, decrease spring pressure on regulator. If pressure is too low, increase spring pressure on regulator. If adjusting spring pressure on regulator does not bring pressures within specification, replace pressure regulator. Disconnect gauges, and bleed brakes.

#### **Fox**

1) Depress brake pedal once firmly. Release brake pedal quickly, watching for regulator lever to move when pedal is released. If regulator lever does not move when pedal is released quickly, replace regulator. If regulator lever moved, go to next step.

2) Raise and support vehicle. Using Spring Compressors (VW 5340), compress rear suspension until measured distance between center of wheel and edge of fender lip is approximately 15" (381 mm). Compress both sides of rear suspension at the same time.

3) Attach Pressure Gauges (US 1016) to left front brake caliper and right rear brake cylinder. Bleed pressure gauge and hoses through valve on gauges. Pump brake pedal several times. Press on brake pedal until reading on front gauge shows pressure given for 1st reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 1st reading in BRAKE PRESSURES TABLE.

4) Increase pressure on brake pedal until reading on front gauge shows pressure given for 2nd reading in BRAKE PRESSURES TABLE. Hold brake pressure to specification. Rear gauge reading should be within specification given for 2nd reading in BRAKE PRESSURES TABLE. If pressures are within specification, brake pressure regulator is functioning properly. If pressures are not within specification, go to next step.

5) If pressure is too high, decrease spring pressure on regulator. If pressure is too low, increase spring pressure on regulator. If adjusting spring pressure on regulator does not bring pressures within specification, replace pressure regulator. Disconnect gauges, and bleed brakes.

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Vanagon

1) Raise and support vehicle. Attach Pressure Gauges (US 1016) to left front brake caliper and right rear brake cylinder. Bleed pressure gauge and hoses through valve on gauges.

2) Pump brake pedal several times. Remove nuts holding pressure regulator. Press on brake pedal until reading on both gauges is 725 psi (51 kg/cm<sup>2</sup>).

3) Tilt regulator forward 30 degrees. DO NOT damage brake lines when tilting regulator. Increase pressure on brake pedal until reading on gauge connected to front caliper reads 1450 psi (102 kg/cm<sup>2</sup>).

4) With regulator tilted forward 30 degrees and gauge for front caliper reading 1450 psi (102 kg/cm<sup>2</sup>), reading on gauge connected to rear brake cylinder must be 798-943 psi (56-66 kg/cm<sup>2</sup>). If reading is not within specified range, replace pressure regulator. Disconnect gauges and bleed brakes. When installing pressure regulator, ensure bolt heads face in forward (driving) direction.

#### BRAKE PRESSURES TABLE

AA

Application	Front Gauge psi (kg/cm <sup>2</sup> )	Rear Gauge psi (kg/cm <sup>2</sup> )
Cabriolet		
1st Reading	797 (56)	565-623 (40-44)
2nd Reading	1450 (102)	739-826 (52-58)
Corrado		
1st Reading	725 (51)	391-478 (28-34)
2nd Reading	1450 (102)	696-783 (49-55)
Fox		
Coupe & Sedan		
1st Reading	725 (51)	537-609 (38-43)
2nd Reading	1450 (102)	725-958 (51-67)
Wagon		
1st Reading	725 (51)	392-479 (28-34)
2nd Reading	1450 (102)	754-841 (53-59)
Golf & Jetta		
1st Reading	725 (51)	(1) 450-479 (32-34)
2nd Reading	1450 (102)	(2) 812-914 (57-64)
GTI & Jetta GLi		
1st Reading	725 (51)	(1) 450-479 (32-34)
2nd Reading	1450 (102)	(2) 754-783 (53-55)
Passat		
1st Reading	725 (51)	435-522 (31-37)
2nd Reading	1450 (102)	739-826 (52-58)
Vanagon		
1st Reading	725 (51)	
2nd Reading	1450 (102)	798-943 (56-66)

(1) - On vehicles equipped with ABS, rear gauge 1st reading is 493-595 psi (35-42 kg/cm<sup>2</sup>).

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(2) - On vehicles equipped with ABS, rear gauge 2nd reading is 812-914 psi (57-64 kg/cm<sup>2</sup>).

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#### MASTER CYLINDER PUSH ROD

NOTE: Push rod is not adjustable on models not listed.

Cabriolet

Loosen lock nut on push rod. Turn clevis until distance between booster mounting flange and center of clevis hole is 8.11" (206 mm). Tighten lock nut.

NOTE: On Vanagon, adjust push rod before installing in vehicle.

Vanagon

Loosen lock nut on push rod. Turn clevis until distance between booster mounting flange and center of clevis eye is 4.40" (112 mm). Tighten lock nut.

#### STOPLIGHT SWITCH

NOTE: Stoplight switches mounted on master cylinder are nonadjustable.

Adjustable stoplight switch is located above brake pedal. Loosen lock nut. Turn switch until distance between brake pedal arm and first thread on switch body is .20-.24" (5-6 mm). Tighten lock nut. See Fig. 1.

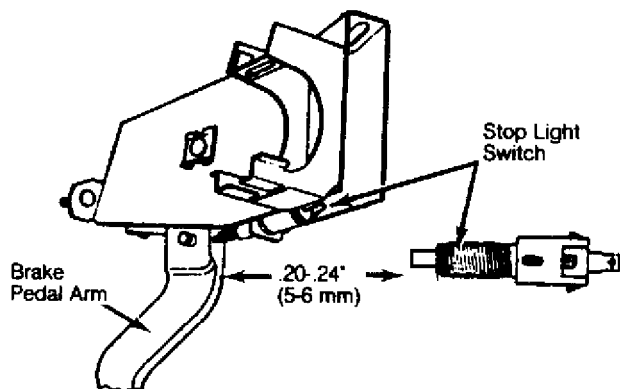


Fig. 1: Adjusting Stoplight Switch  
Courtesy of Volkswagen United States, Inc.

#### PARKING BRAKE

Cabriolet & Fox

Raise and support vehicle. Apply brake pedal once firmly. On Fox, remove heat deflector plate from under vehicle to access parking brake cable adjustment. On all vehicles, pull parking brake handle up 2 notches. Loosen locking nuts, at parking brake lever. Tighten

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adjusting nuts until respective rear wheel is locked. Release parking brake. Ensure rear wheels rotate freely. Tighten lock nuts.

Corrado, GTI, Jetta GLi & Passat (Rear Disc)

1) Raise and support vehicle. Disengage parking brake. Loosen locking nuts at parking brake lever. Tighten adjusting nuts until levers on calipers just move off stops. Measure gap between stop and lever. See Fig. 2.

2) Maximum clearance between parking brake lever (on caliper) and stop is .060" (1.5 mm). Apply and release parking brake. Ensure rear wheels rotate freely. Tighten lock nuts.

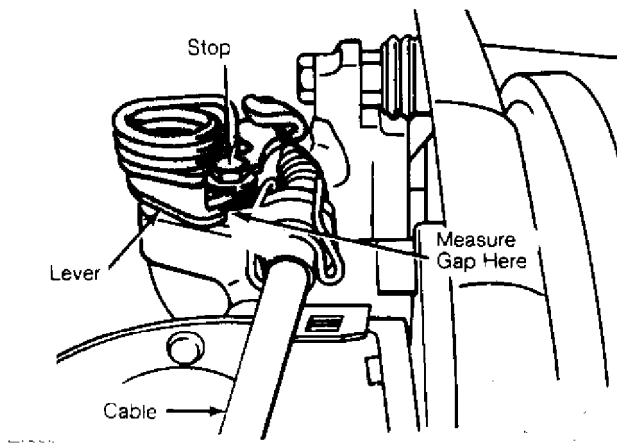


Fig. 2: Adjusting Rear Disc Parking Brake  
Courtesy of Volkswagen United States, Inc.

Golf, GTI & Jetta (Rear Drum)

Raise and support vehicle. Apply brake pedal once firmly. Pull parking brake handle up 4 notches. Loosen locking nuts, at parking brake lever. Tighten adjusting nuts until respective rear wheel can just be rotated by hand. Release parking brake. Ensure rear wheels rotate freely. Tighten lock nuts.

NOTE: On Vanagon, check rear brake adjustment before adjusting parking brake.

Vanagon

1) Raise and support vehicle. Release parking brake. Tighten self-locking adjusting nut until there is no play at brake components. Check for play by pulling on cable housings. Apply and release parking brake several times.

2) Check adjustment by pulling parking brake handle up 2-4 notches. Rear wheels should be too tight to turn by hand. Release parking brake. Rear wheels should rotate freely.

## WHEEL BEARINGS

NOTE: FWD front wheel bearings and rear wheel bearings on Vanagon,

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also called hub or axle bearings, are sealed units with 1-piece outer race. Bearings are not adjustable.

NOTE: Front wheel bearings, also called hub or axle bearings, are sealed units with 1-piece outer race. Bearings are not adjustable

Rear Wheel Bearings (Except Vanagon)

Tighten adjusting nut snugly while turning drum or rotor.

Back off and retighten nut until thrust washer can just be moved with screwdriver. Install locking cap and new cotter key. Install dust cap.

Front Wheel Bearings (Vanagon)

Tighten adjusting nut snugly while turning rotor. Back off and retighten nut slowly until thrust washer can just be moved with screwdriver under finger pressure. After adjustment, peen flange of NEW hub nut into spindle axle shaft recess.

## REMOVAL & INSTALLATION

### FRONT DISC BRAKE PADS

Removal (Cabriolet, Fox, Golf, GTI & Jetta)

Raise and support vehicle. Remove front wheels. Remove retaining spring at top and bottom of caliper. Remove caliper mounting bolts. Push caliper assembly upward and swing out from bottom. Hang caliper aside with wire. Siphon small amount of brake fluid from reservoir. Remove pads and retaining springs from caliper support. Replace pads that exceed wear limit. Wear limit of pads is .28" (7.0 mm), including backing plate. See Fig. 3, 4 or 5.

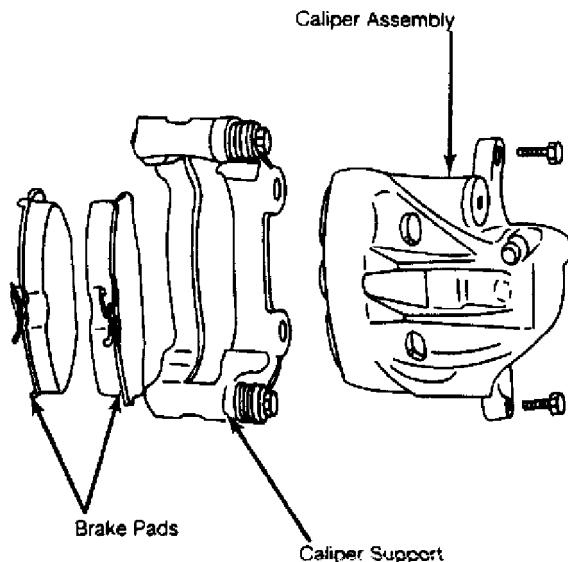


Fig. 3: Identifying Front Caliper Components (Typical)  
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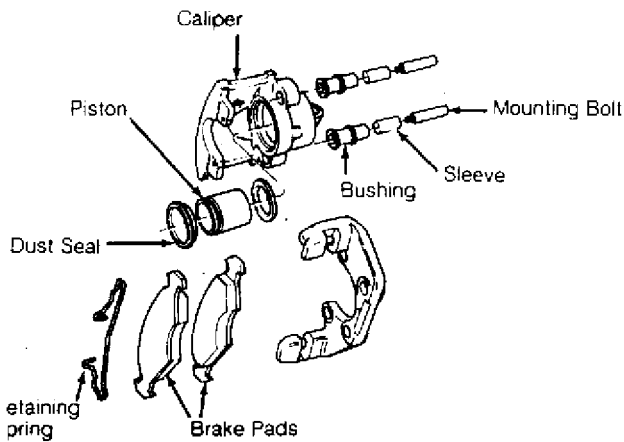


Fig. 4: Identifying Front Disc Brake Components (Fox)  
Courtesy of Volkswagen United States, Inc.

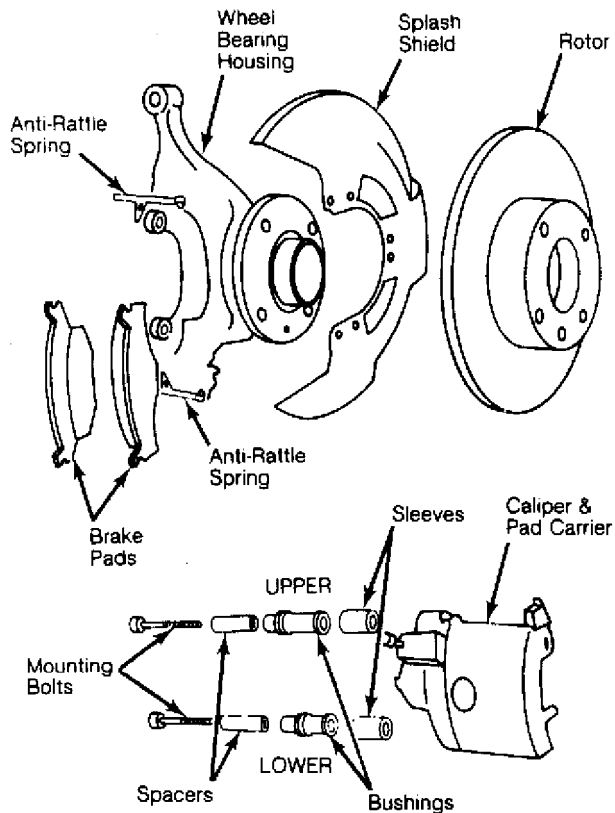


Fig. 5: Identifying Front Disc Brake Components (Except Fox)  
Courtesy of Volkswagen United States, Inc.

#### Installation

1) Seat caliper piston fully into cylinder bore. Attach retaining springs to caliper support. Install inner pad first and then install outer pad.

2) Install caliper assembly into caliper support. DO NOT force caliper any further than necessary to start Allen head mounting bolts. Excessive force could distort springs, which could cause noises



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during braking. Depress brake pedal several times to allow pads to move into operating position. Ensure master cylinder reservoir fluid level is full.

#### **Removal (Corrado, Passat & Vanagon)**

Raise and support vehicle. Remove front wheels. Hold lower guide pin using an open end wrench. Remove lower caliper mounting bolt. Push caliper assembly upward and swing out from bottom. Siphon small amount of brake fluid from reservoir. Remove pads and retaining springs from caliper support. Replace pads exceeding wear limit. Wear limit of pads is .28" (7.0 mm), including backing plate. See Fig. 3 or 5.

#### **Installation**

Seat caliper piston fully into cylinder bore. Install inner pad and then outer pad. Swing caliper assembly down. Hold lower guide pin using an open end wrench. Install lower caliper mounting bolt. Depress brake pedal several times to allow pads to move into operating position. Ensure master cylinder reservoir fluid level is full.

### **FRONT & REAR BRAKE CALIPER**

#### **Removal & Installation**

Raise and support vehicle. Remove wheels. Disconnect brake line from caliper, and plug openings. Bend back locking tabs (if equipped) on mounting bolts. If removing rear brake calipers, disconnect parking brake cables. On all calipers, remove caliper mounting bolts. See Fig. 3 or 8. Remove caliper assembly from wheel bearing housing. To install, reverse removal procedure. Use new lock plates (if equipped) and mounting bolts. Bleed hydraulic brake system. See BLEEDING PROCEDURES under BLEEDING BRAKE SYSTEM.

### **FRONT & REAR BRAKE ROTOR**

#### **Removal (Except Vanagon)**

Raise and support vehicle. Remove wheels. Remove caliper and suspend from frame with wire. Remove countersunk screw that holds rotor to hub. Pull rotor off hub.

#### **Removal (Vanagon)**

Raise and support vehicle. Remove wheels. Remove caliper, leaving hose connected. Suspend caliper from frame with wire. Remove grease cap. Loosen peen nut. Remove thrust washer and outer wheel bearing. Pull hub and rotor from spindle.

#### **Installation (All Models)**

To install, reverse removal procedure. Adjust wheel bearings (if necessary). See WHEEL BEARINGS under ADJUSTMENTS.

### **REAR DISC BRAKE PADS**

#### **Removal (Corrado & Passat)**

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Raise and support vehicle. Remove rear wheels. Disconnect parking brake cable from caliper. Remove caliper mounting bolts. Remove caliper and hang aside. Siphon small amount of brake fluid from reservoir. Remove pads and retaining springs from caliper support. Replace pads that exceed wear limit. Wear limit of pads is .28" (7.0 mm), including backing plate.

#### **Installation**

Seat caliper piston fully into cylinder bore. Install inner pad first and then install outer pad. Position caliper. Install caliper mounting bolts. Depress brake pedal several times to allow pads to move into operating position. Ensure master cylinder reservoir fluid level is full.

**CAUTION:** On GTI and Jetta GLi, DO NOT depress brake pedal with engine running to reset automatic adjuster. High pressure created by booster could jam automatic adjustment piston causing premature pad wear and/or damage to automatic adjuster.

#### **Removal (GTI & Jetta GLi)**

Raise and support vehicle. Remove rear wheels. Disconnect parking brake cable from caliper. Remove upper caliper mounting bolt. Swing caliper down on lower mounting bolt. Remove brake pads from carrier. Wear limit is .276" (7.0 mm), including backing plate.

#### **Installation**

Place brake pads in carrier. Using Allen wrench, push piston into caliper while turning it clockwise. Swing caliper into position. Install new self-locking upper mounting bolt. Reconnect parking brake cable, and check parking brake adjustment. With engine off, depress brake pedal approximately 40 times to reset automatic adjuster.

## **REAR BRAKE DRUM**

**CAUTION:** ALWAYS loosen or tighten castellated axle nuts with wheels on ground.

#### **Removal (Cabriolet, Golf, GTI & Jetta)**

Raise and support vehicle. Remove one wheel bolt. Using screwdriver inserted through wheel bolt hole, push adjusting wedge up against stop. Remove grease cap, cotter pin, nut lock and nut. Remove thrust washer and outer bearing. Remove drum with inner bearing and grease seal.

#### **Installation**

To install, reverse removal procedure. Adjust wheel bearings (if necessary). See WHEEL BEARINGS under ADJUSTMENTS. Apply brake pedal firmly several times to set self-adjusting mechanism.

#### **Removal (Fox)**

Raise and support vehicle. Remove heat deflector plate from

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under vehicle to access parking brake cable adjustment. Disconnect parking brake cable (at adjustment point). Remove dust cap and cotter pin. Loosen axle nut. Raise and support vehicle. Remove wheels. Pull off brake drum.

#### Installation

To install, reverse removal procedure. Adjust wheel bearings (if necessary). See WHEEL BEARINGS under ADJUSTMENTS.

#### Removal (Vanagon)

Remove dust cap and cotter pin. Loosen castellated nut. Raise and support vehicle. Remove wheels. Release parking brake at equalizer, and back off adjuster. Remove drum retaining screws. Attach a puller and remove drum. Ensure drum can rotate freely during removal.

#### Installation

To install, reverse removal procedure. Drum retaining screws must be tight. Tighten castellated axle nut to 253 ft. lbs. (345 N.m). Adjust parking brake, and depress brake pedal several times to set self-adjusting mechanism.

## REAR BRAKE SHOES

#### Removal (Cabriolet, Fox, Golf, GTI & Jetta)

1) Remove brake drum. See REAR BRAKE DRUM under REMOVAL & INSTALLATION. After removing drum, remove retainer clips, hold-down springs and anchor pins. Remove lower return spring. Disconnect parking brake cable from lever. See Fig. 6.

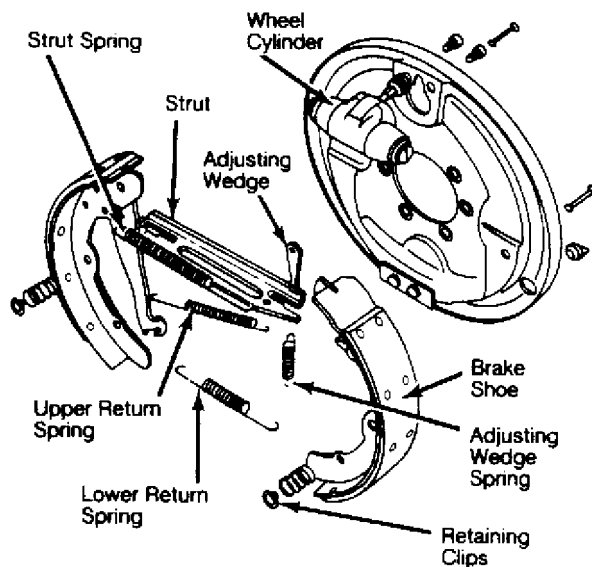


Fig. 6: Identifying Rear Brake Components (Except Vanagon)  
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2) Disconnect adjusting wedge spring and upper return spring.

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Remove brake shoes together with push rod and tensioning spring. Place push rod and shoes in vise. Remove tension spring. Separate shoes from push rod.

#### Installation

To install, reverse removal procedure. Ensure that lug on adjusting wedge faces backing plate. Adjust wheel bearings (if necessary). See WHEEL BEARINGS under ADJUSTMENTS. Apply brake firmly to set self-adjusting mechanism.

#### Removal (Vanagon)

1) Remove brake drum. See REAR BRAKE DRUM under REMOVAL & INSTALLATION. After removing drum, remove retainer clips, hold-down springs and anchor pins. Disconnect parking brake cable from lever on brake shoe. Disconnect lower return and adjuster springs. Pull brake shoes out of lower support. See Fig. 7.

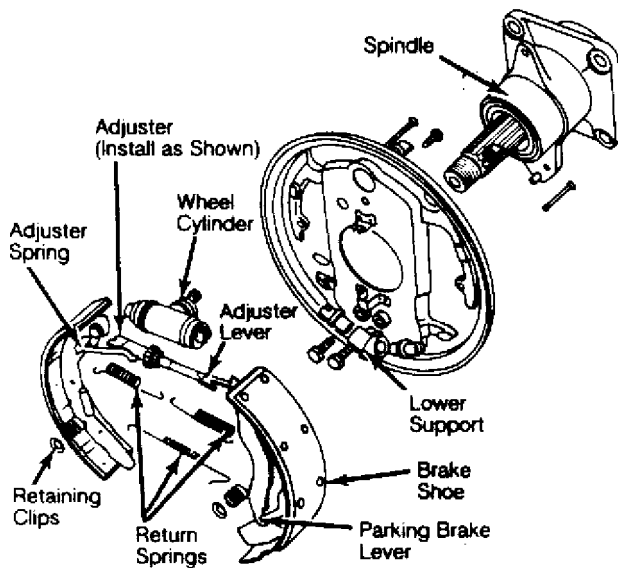


Fig. 7: Identifying Rear Brake Components (Vanagon)  
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2) Disconnect both upper return springs. Remove both brake shoes from backing plate together with adjuster lever. Ensure both pistons remain in wheel cylinder. Separate brake shoes from adjuster lever. Remove parking brake lever from rear brake shoe.

#### Installation

1) To install, reverse removal procedure. Adjust brake shoes so distance from lining surface on leading shoe to lining surface on trailing shoe is 9.87" (250.7 mm).

2) Adjust parking brake at equalizer. There should be no free play between parking brake lever on brake shoe and adjusting rod. Install brake drum. Depress brake pedal several times to set self-adjusting mechanism.

## MASTER CYLINDER

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#### Removal (Except Vanagon)

- 1) Drain master cylinder reservoir. Remove cover plate (if equipped). Disconnect brake lines and wiring at master cylinder.
- 2) On models without power assist servo, disconnect brake push rod at brake pedal. On models equipped with power assist servo, remove master cylinder from servo. Be careful to keep any spacers used on attaching bolts for proper installation.

#### Installation

To install, reverse removal procedure. Always use new "O" ring between master cylinder and power assist servo. Bleed hydraulic system.

#### Removal (Vanagon)

- 1) Remove instrument panel. Drain master cylinder reservoir. Disconnect brake lines and wiring at master cylinder. Disconnect vacuum lines at power assist servo. Remove pedal and bracket assembly.
- 2) Disconnect brake push rod from brake pedal. Remove power assist servo and master cylinder assembly together from pedal bracket. Remove master cylinder from power assist servo.

#### Installation

To install, reverse removal procedure. Install new "O" ring between master cylinder and power assist servo. Adjust brake push rod length. See MASTER CYLINDER PUSH ROD under ADJUSTMENTS in this article. Bleed hydraulic system.

## **VACUUM POWER ASSIST SERVO**

NOTE: Not all vehicles have all components.

#### Removal (Except Vanagon)

Remove master cylinder from power assist servo. Disconnect brake push rod from brake pedal. Disconnect vacuum hose from servo. Remove servo from vehicle.

#### Removal (Vanagon)

Remove instrument panel. Remove servo and master cylinder as an assembly. Separate master cylinder from servo.

#### Installation (All Models)

To install, reverse removal procedure. Before attaching brake push rod to brake pedal, check and adjust push rod length. See MASTER CYLINDER PUSH ROD under ADJUSTMENTS. Always replace damping ring, washer, filter and "O" ring (as equipped). Slots in damping washer and filter must be offset 180 degrees (if equipped). Complete installation, and bleed hydraulic system. See Fig. 9.

## **OVERHAUL**

NOTE: Black staining from piston seal wear may show on caliper bore walls and piston. This staining is normal. DO NOT

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disassemble power assist servo as parts are not available.

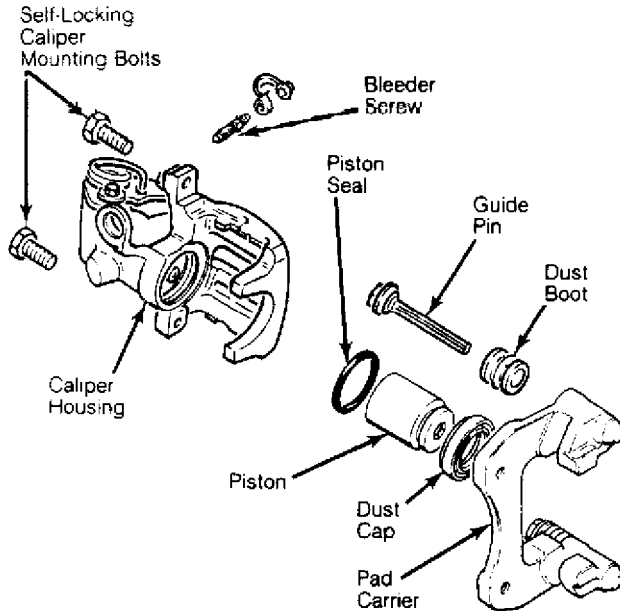


Fig. 8: Identifying Caliper Components (Typical)  
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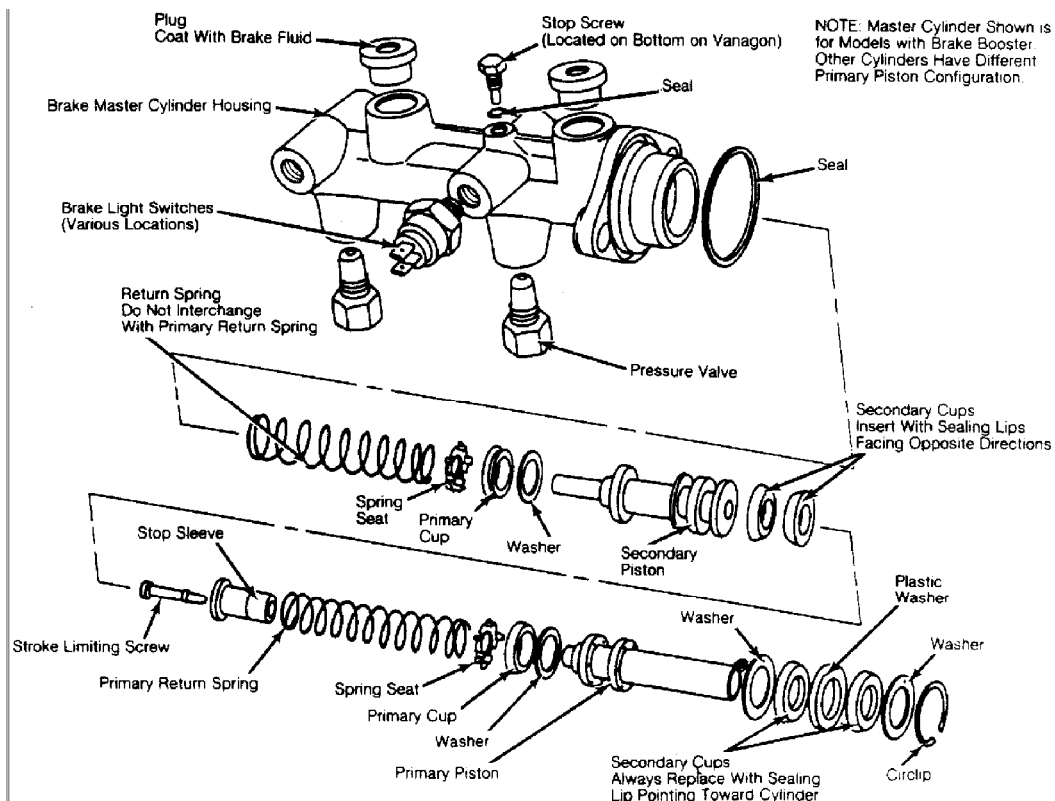


Fig. 9: Identifying Power Assist Master Cylinder Components  
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**TORQUE SPECIFICATIONS**

TORQUE SPECIFICATIONS TABLE

AA

Application	Ft. Lbs. (N.m)
Caliper Mounting Bolts (1)	
Cabriolet .....	29 (39)
Corrado, Passat & Vanagon .....	26 (35)
Fox .....	30 (41)
Golf, GTI & Jetta	
Front .....	18 (25)
Rear .....	26 (35)
Pad Carrier Mounting Bolt	
Cabriolet .....	52 (70)
Corrado & Passat	
Front .....	92 (125)
Rear .....	48 (65)
Vanagon .....	200 (271)
Fox, Golf, GTI & Jetta .....	48 (65)
Rear Axle Nut	
Vanagon .....	369 (500)
Rear Backing Plate-To-Flange Bolt	
Except Vanagon .....	44 (60)
Vanagon .....	47 (64)
Rear Brake Shoe Support Bolt	
Vanagon .....	48 (65)
Wheel Lug Nut	
Except Vanagon .....	81 (110)
Vanagon .....	123 (167)

INCH Lbs. (N.m)

Wheel Cylinder Bolt	
Except Vanagon .....	80 (9)
Vanagon .....	177 (20)

(1) - Always replace all self-locking bolts.

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**DISC BRAKE SPECIFICATIONS**

DISC BRAKE SPECIFICATIONS TABLE (1)

AA

Application	In. (mm)
Front	
Cabriolet	
Original Thickness .....	.787 (20)
Wear Limit .....	.709 (18)
Corrado	
Disc Diameter .....	11.02 (280)

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Original Thickness	.....	.866 (22)
Wear Limit	.....	.787 (20)
Fox		
Disc Diameter	.....	9.41 (239)
Original Thickness	.....	.472 (12)
Wear Limit	.....	.394 (10)
Golf, GTI, Jetta & Passat		
Solid		
Original Thickness	.....	.472 (12)
Wear Limit	.....	.394 (10)
Vented		
Disc Diameter	.....	10.079 (256)
Original Thickness	.....	.787 (20)
Wear Limit	.....	.709 (18)
Vanagon		
Disc Diameter	.....	10.16 (258)
Original Thickness	.....	.591 (15)
Wear Limit	.....	.512 (13)
Rear		
Original Thickness	.....	.394 (10)
Wear Limit	.....	.315 (8)

(1) - Lateral runout is .002" (.05 mm)

AA

**DRUM BRAKE SPECIFICATIONS**

DRUM BRAKE SPECIFICATIONS TABLE

AA

Application	In. (mm)
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Except Vanagon

Drum Diameter	.....	7.087 (180)
Maximum Drum Refinish Diameter	.....	7.106 (180.5)
Wear Limit	.....	7.126 (181)

Vanagon

Drum Diameter	.....	9.921 (252)
Maximum Drum Refinish Diameter	.....	(1) 9.961 (253)
Wear Limit	.....	9.980 (253.5)

(1) - Use oversize linings after turning drum .020" (.50 mm) or more.

AA

**END OF ARTICLE**