



Technical Service Bulletin

SUBJECT:		No:	TSB-19-35-001
PUSH ROD DEPTH ADJUSTMENT ADDED TO REMOVAL/INSTALLATION OF BRAKE MASTER CYLINDER ASSEMBLY - SMR		DATE:	January 2019
		MODEL:	2014-19 Mirage, 2017-19 Mirage G4
CIRCULATE TO:	<input type="checkbox"/> GENERAL MANAGER	<input checked="" type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input type="checkbox"/> WARRANTY PROCESSOR	<input type="checkbox"/> SALES MANAGER

PURPOSE

This TSB updates the Service Brakes section of the affected Service Manuals to add information on push rod depth adjustment during removal and installation of the brake master cylinder and brake booster assemblies.

AFFECTED VEHICLES

- 2014, 2015, 2017, 2018, 2019 Mirage
- 2017-2019 Mirage G4

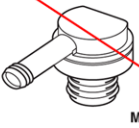
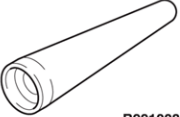
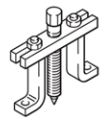
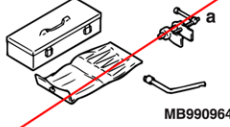
AFFECTED SERVICE MANUALS

- 2014, 2015, 2017, 2018, 2019 Mirage Service Manual, Group 35-Service Brakes
- 2017-2019 Mirage G4 Service Manual, Group 35-Service Brakes

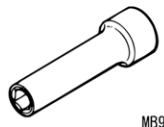
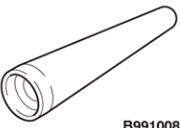
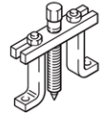
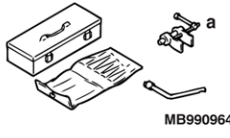


Please make the indicated changes below to the 2014-2015 Mirage Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Special Tools.

SPECIAL TOOLS

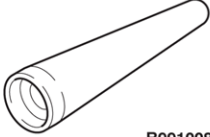
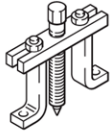
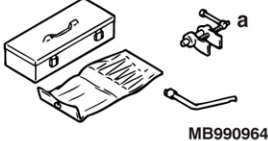
Tool	Number	Name	Use
 MB992146	MB992146	Booster test adapter	Inspection using a simplified tester
 B991008	MB991008	piston cup Installer	Installation of the drum brake wheel cylinder piston cup
 B990241	MB991292	Axle shaft puller	Rear wheel hub assembly removal
 MB990964	MB990964 a: MB990520	Brake tool set a: Disc brake piston expander	Pushing-in of the disc brake piston

↑ <Incorrect>
 ↓ <Correct>

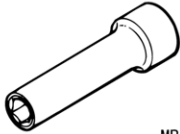
Tool	Tool number and name	Supersession	Application
 MB991568	MB991568 Push rod adjusting socket	General service tool	Adjustment of the brake booster push rod protrusion amount
 B991008	MB991008 piston cup Installer	—	Installation of the drum brake wheel cylinder piston cup
 B990241	MB991292 Axle shaft puller	—	Rear wheel hub assembly removal
 MB990964	MB990964 Brake tool set a: MB990520 Disc brake piston expander	General service tool	Pushing-in of the disc brake piston

Please make the indicated changes below to the 2017-2019 Mirage and Mirage G4 Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Special Tools.

SPECIAL TOOLS

Tool	Tool number and name	Supersession	Application
 <p style="text-align: center;">B991008</p>	MB991008 Piston cup Installer	–	Installation of the drum brake wheel cylinder piston cup
 <p style="text-align: center;">B990241</p>	MB991292 Axle shaft puller	General service tool	Rear wheel hub assembly removal
 <p style="text-align: center;">MB990964</p>	MB990964 a: MB990520 Brake tool set a: Disc brake piston expander	MB990620-01 or general service tool	Pushing-in of the disc brake piston

<Added>

 <p style="text-align: center;">MB991568</p>	MB991568 Push rod adjusting socket	General service tool	Adjustment of the brake booster push rod protrusion amount
---	---------------------------------------	----------------------	--

Please make the indicated changes below to the 2014, 2015, and 2017 Mirage and 2017 Mirage G4 Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Master Cylinder Assembly and Brake Booster Assembly.

MASTER CYLINDER ASSEMBLY AND BRAKE BOOSTER ASSEMBLY

REMOVAL AND INSTALLATION

CAUTION

<Incorrect>

~~The master cylinder cannot be disassembled. Be careful not to remove the primary piston.~~

<Added>

Group 35A - On-Vehicle Service

Pre-removal Operation

- Brake Fluid Draining
- Battery Removal (Refer to GROUP 54A – Battery).

Post-installation Operation

- Battery Installation (Refer to GROUP 54A – Battery).
- Brake Fluid Supplying and Air Bleeding (Refer to).
- Brake Pedal Adjustment (Refer to)

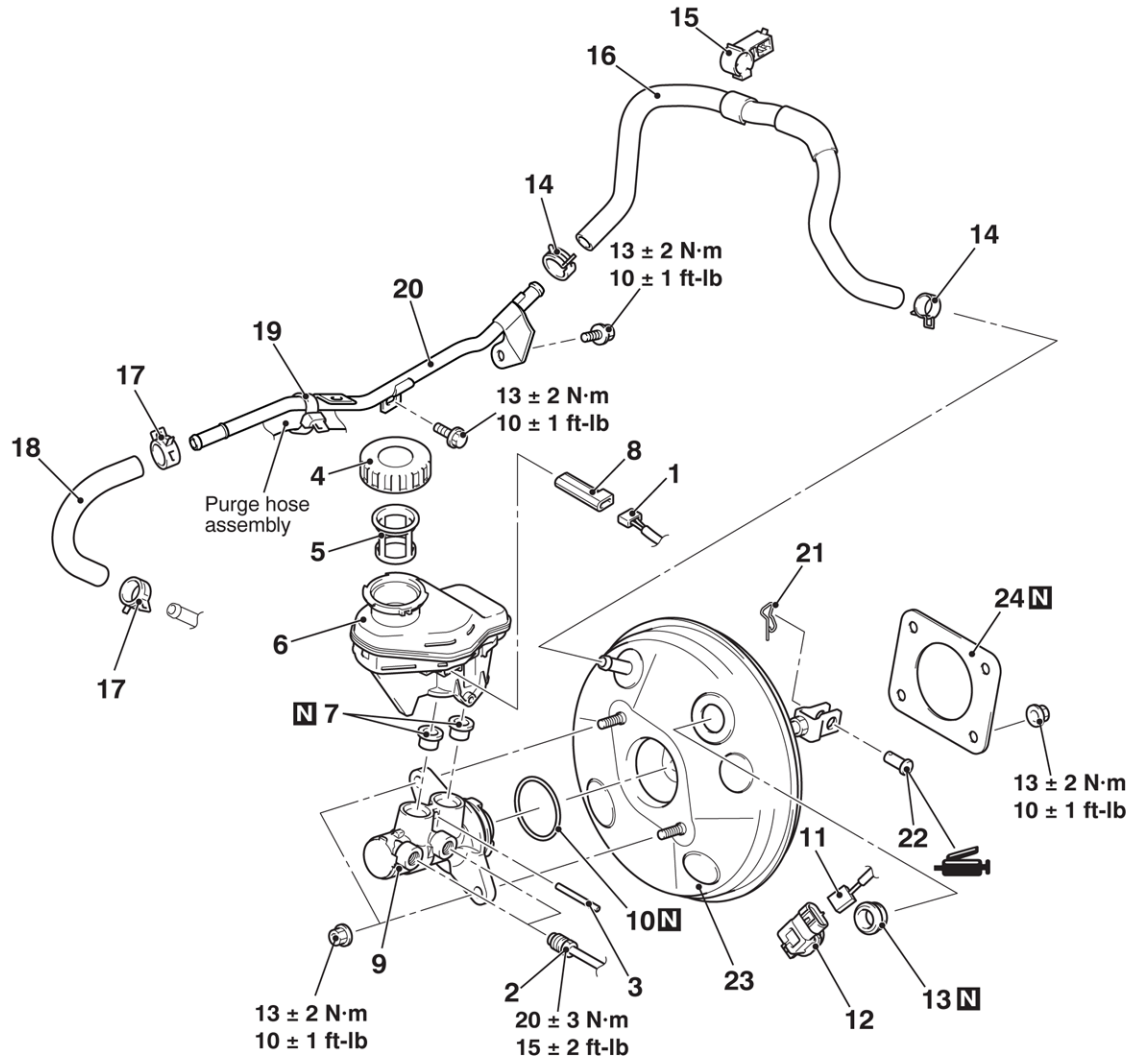
<Correct>

master cylinder assembly (service parts)

- The master cylinder assembly cannot be disassembled. Perform the operation below with care to prevent falling-off of the piston, because structurally the piston comes off easily.
 - Do not remove the cover mounted on the spare master cylinder assembly until the installation work.
 - During the master cylinder assembly operation, handle it with the piston facing upwards.
 - To remove the master cylinder assembly from the brake booster assembly, depress the brake pedal several times to release the negative pressure in the brake booster assembly before removal.
- If the piston comes out from the master cylinder assembly for 3.2 mm or more, do not reinsert it to use. Replace the master cylinder assembly with the new one.
- Do not damage the piston by impact, pinching, and so on.
- Do not touch the piston directly by hand. To handle it, hold the body section of the master cylinder assembly.
- Do not allow foreign matters to adhere to the piston. If foreign matter adheres to it, remove the foreign matter carefully so that the piston does not come off, using a new dry rag. Do not use water or detergent.

If the piston moves 3.2 mm (0.13 inch) or more by pushing it, replace the master cylinder assembly with a new one.

Please make the indicated changes below to the 2014, 2015, and 2017 Mirage Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Master Cylinder Assembly and Brake Booster Assembly.



ACE00236AD

Removal steps

1. Brake fluid level switch connector
2. Brake pipe connection
3. Pin
4. Reservoir cap
5. Reservoir filter
6. Reservoir assembly
7. Reservoir seal
8. Brake fluid level switch
9. Brake master cylinder assembly
10. O-ring
11. Brake vacuum sensor connector
12. Brake vacuum sensor
13. Grommet

Removal steps (Continued)

14. Hose clip
15. Clip
- >>A<< 16. Vacuum hose (with built-in check valve)
17. Hose clip
18. Vacuum hose
19. Cable band
20. Vacuum pipe
21. Snap pin
22. Clevis pin
23. Brake booster assembly
24. Sealer

<Added>

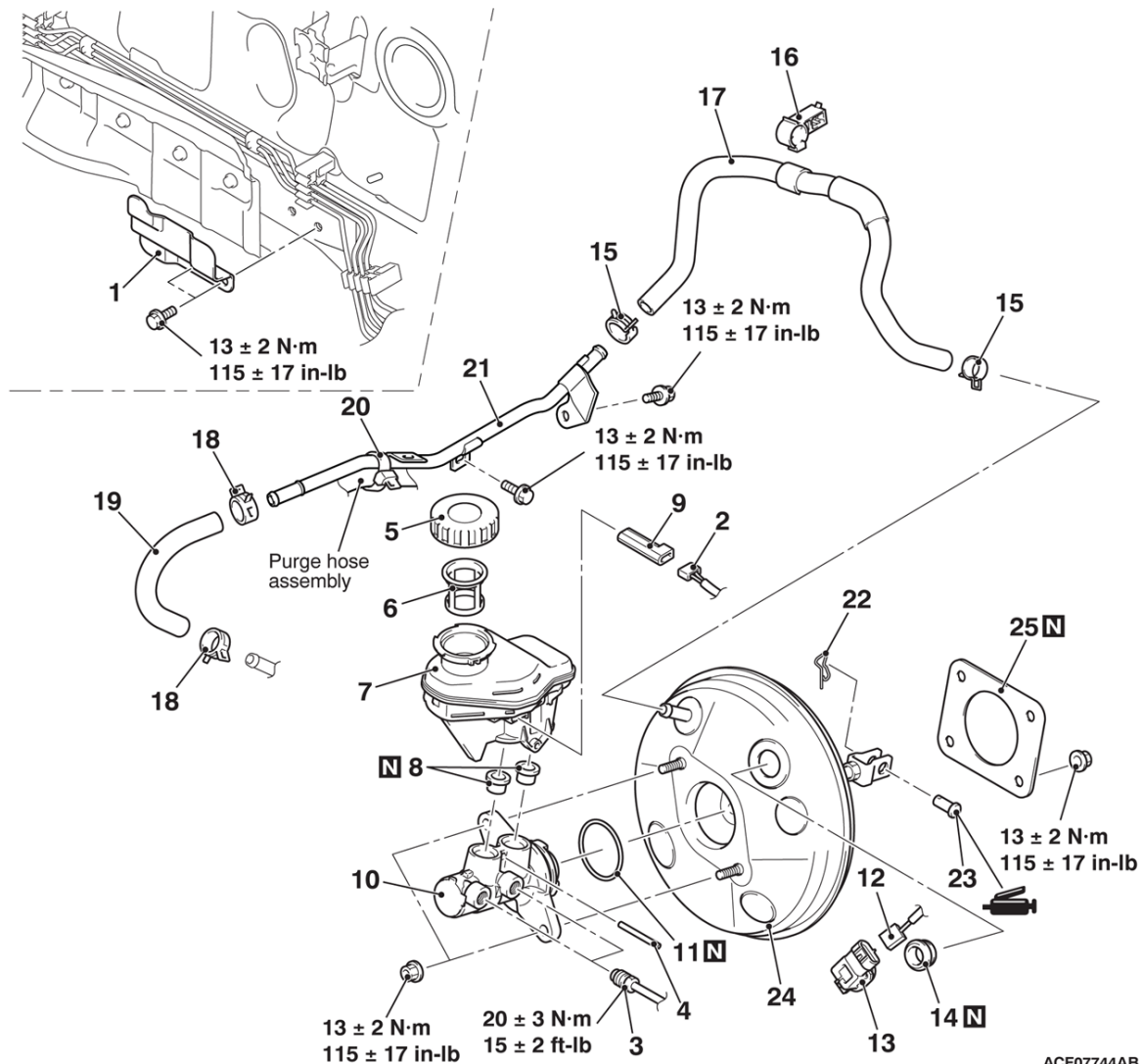
<<AA>> >>C<<

<<A>>

<Added>

>>B<< • Push rod depth adjustment
 <only at installation>

Please make the indicated changes below to the 2017 Mirage G4 Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Master Cylinder Assembly and Brake Booster Assembly.



Removal steps

1. Heat protector
2. Brake fluid level switch connector
3. Brake pipe connection
4. Pin
5. Reservoir cap
6. Reservoir filter
7. Reservoir assembly
8. Reservoir seal
9. Brake fluid level switch
10. Brake master cylinder assembly
11. O-ring
12. Brake vacuum sensor connector
13. Brake vacuum sensor **<Added>**

Removal steps (Continued)

14. Grommet
15. Hose clip
16. Clip
17. Vacuum hose (with built-in check valve)
18. Hose clip
19. Vacuum hose
20. Cable band
21. Vacuum pipe
22. Snap pin
23. Clevis pin
24. Brake booster assembly
25. Sealer

<<AA>> >>C<<<
 >>B<<< . Push rod depth adjustment
 <only at installation>

Please make the indicated changes below to the 2014, 2015, and 2017 Mirage and 2017 Mirage G4 Service Manual, Group 35-Service Brakes -> 35A-Basic Brake -> Master Cylinder Assembly and Brake Booster Assembly.

REMOVAL SERVICE POINT

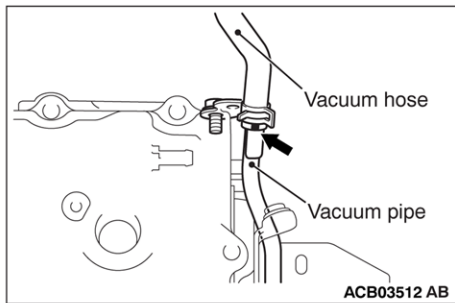
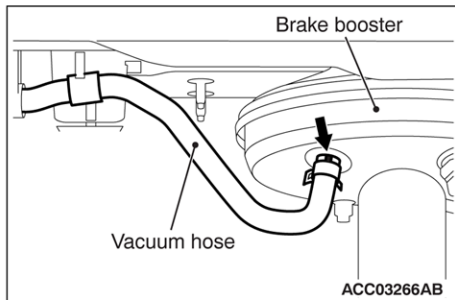
<<A>> BRAKE BOOSTER ASSEMBLY REMOVAL

Disconnect the engine from the engine mounting. Lower the front of the engine to remove its.

INSTALLATION SERVICE POINT

>>A<< VACUUM HOSE (WITH BUILT-IN CHECK VALVE) CONNECTION

Install the vacuum hose (with built-in check valve) with its marking located as shown in the figure.



<Added>

See next 2 pages

<Added>

<<AA>> BRAKE MASTER CYLINDER ASSEMBLY REMOVAL

⚠ CAUTION

- The master cylinder assembly cannot be disassembled. Perform the operation with care to prevent the falling off of the piston, because structurally the piston comes off easily.
- If the piston moves 3.2 mm (0.13 inch) or more by pushing it, replace the master cylinder assembly with a new one.

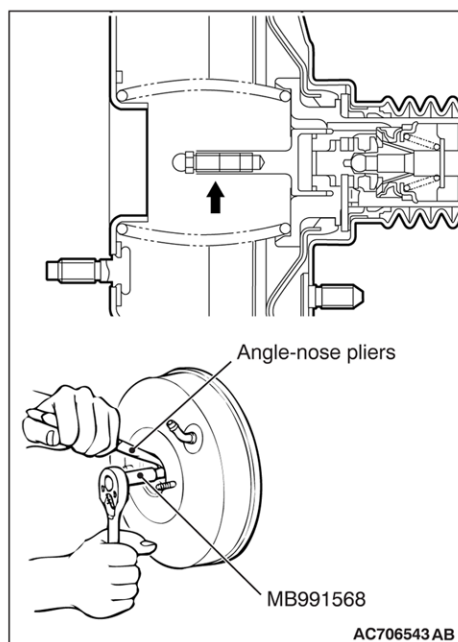
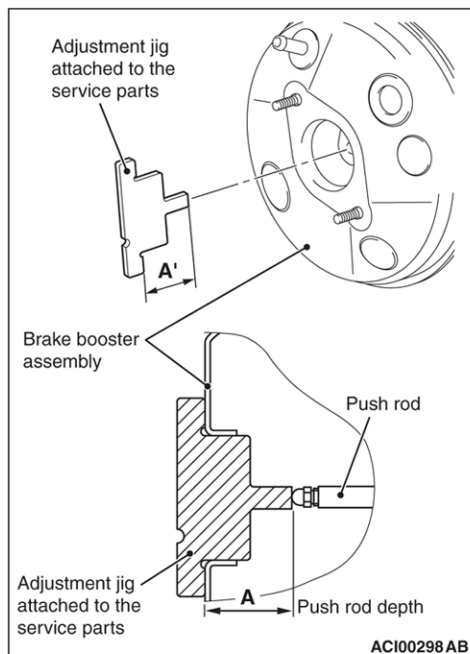
<Added>

>>B<< PUSH ROD DEPTH ADJUSTMENT

⚠ CAUTION

When replacing the master cylinder assembly with the new one, the push rod depth must be adjusted using the adjustment jig attached to the service parts. When re-installing the removed master cylinder assembly, the adjustment is not necessary.

1. Check that the push rod depth (A) and the length of the adjustment jig attached to the service parts (A') are equal ($A = A'$).



2. When the push rod depth differs from the jig length, use angle nose pliers to fix the push rod at the area indicated with an arrow. Then, use the push rod adjusting socket (special tool: MB991568) to rotate the push rod leading end, and adjust the push rod depth to match with the jig length.

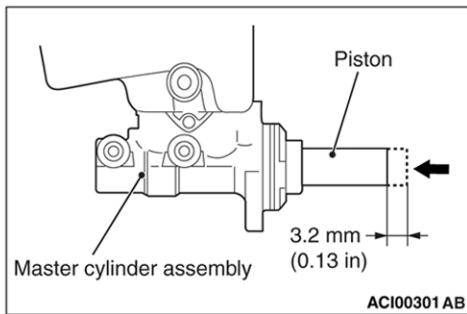
NOTE: It is recommended to use the angle nose pliers that are commercially available.

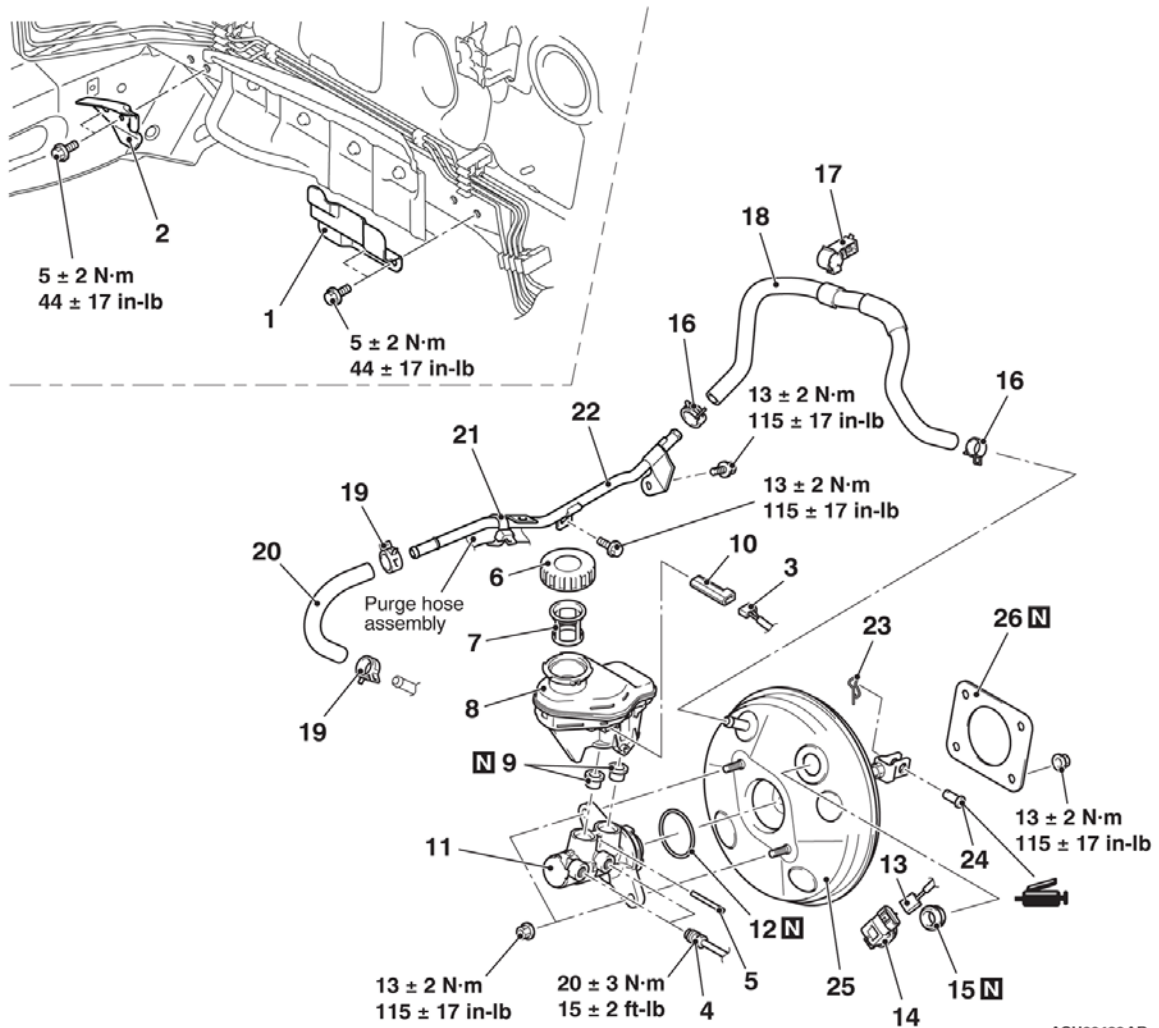
<Added>

>>C<< MASTER CYLINDER ASSEMBLY INSTALLATION

⚠ CAUTION

- The master cylinder assembly cannot be disassembled. Perform the operation with care to prevent the falling off of the piston, because structurally the piston comes off easily.
- If the piston moves 3.2 mm (0.13 inch) or more by pushing it, replace the master cylinder assembly with a new one.





ACH00429AB

Removal steps

1. Brake line heat protector
2. Heat protector
3. Brake fluid level switch connector
4. Brake pipe connection
5. Pin
6. Reservoir cap
7. Reservoir filter
8. Reservoir assembly
9. Reservoir seal
10. Brake fluid level switch
11. Brake master cylinder assembly
12. O-ring

Removal steps (Continued)

13. Brake vacuum sensor connector
14. Brake vacuum sensor
15. Grommet
16. Hose clip
17. Clip
- >>A<< 18. Vacuum hose (with built-in check valve)
19. Hose clip
20. Vacuum hose
21. Cable band
22. Vacuum pipe
23. Snap pin
24. Clevis pin
- <<A>> 25. Brake booster assembly
26. Sealer

<Added>
 <<AA>> >>C<<
 <Added>
 >>B<< · Push rod depth adjustment
 <only at installation>

REMOVAL SERVICE POINT

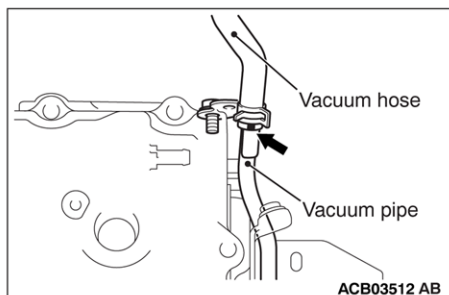
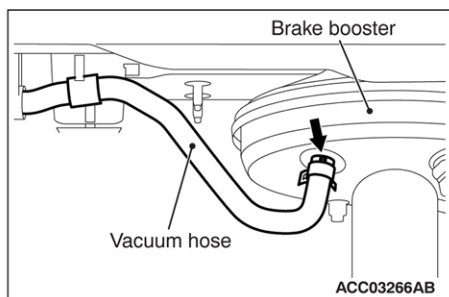
<<A>> BRAKE BOOSTER ASSEMBLY REMOVAL

Disconnect the engine from the engine mounting. Lower the front of the engine to remove its.

INSTALLATION SERVICE POINT

>>A<< VACUUM HOSE (WITH BUILT-IN CHECK VALVE) CONNECTION

Install the vacuum hose (with built-in check valve) with its marking located as shown in the figure.



<Added>

See next 2 pages

<Added>

<<AA>> BRAKE MASTER CYLINDER ASSEMBLY REMOVAL

⚠ CAUTION

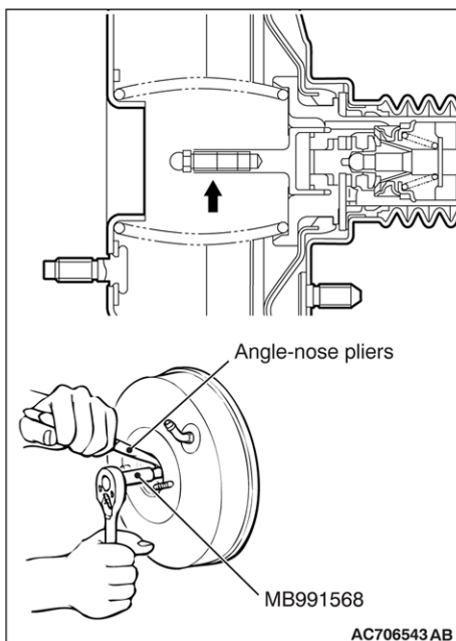
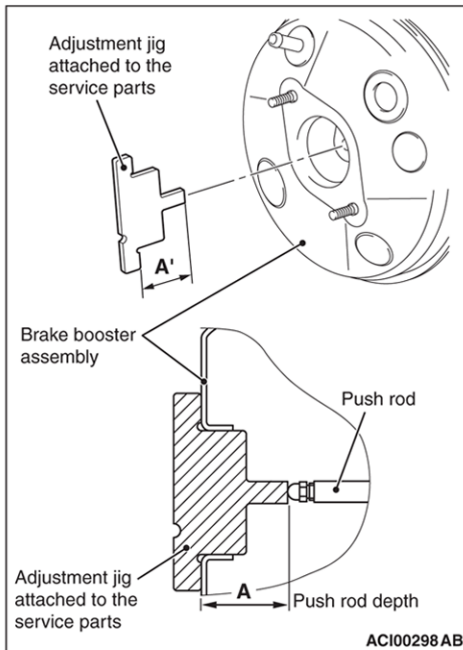
- The master cylinder assembly cannot be disassembled. Perform the operation with care to prevent the falling off of the piston, because structurally the piston comes off easily.
- If the piston moves 3.2 mm (0.13 inch) or more by pushing it, replace the master cylinder assembly with a new one.

<Added>

>>B<< PUSH ROD DEPTH ADJUSTMENT**⚠ CAUTION**

When replacing the master cylinder assembly with the new one, the push rod depth must be adjusted using the adjustment jig attached to the service parts. When re-installing the removed master cylinder assembly, the adjustment is not necessary.

1. Check that the push rod depth (A) and the length of the adjustment jig attached to the service parts (A') are equal ($A = A'$).



2. When the push rod depth differs from the jig length, use angle nose pliers to fix the push rod at the area indicated with an arrow. Then, use the push rod adjusting socket (special tool: MB991568) to rotate the push rod leading end, and adjust the push rod depth to match with the jig length.

NOTE: It is recommended to use the angle nose pliers that are commercially available.

<Added>

>>C<< MASTER CYLINDER ASSEMBLY INSTALLATION

⚠ CAUTION

- The master cylinder assembly cannot be disassembled. Perform the operation with care to prevent the falling off of the piston, because structurally the piston comes off easily.
- If the piston moves 3.2 mm (0.13 inch) or more by pushing it, replace the master cylinder assembly with a new one.

