Original sent to Dealers: 11/08/10.
Update sent to Dealers: 12/01/10.

TOYOTA

Updated 12/01/2010 – The Highlander 6 Cylinder "*Air Surge Tank to Intake Manifold Gasket*" and the "*Brake Booster Gasket*" part numbers were corrected in the Appendix. Refer to the "**BRAKE BOOSTER PART NUMBER INFORMATION**" table for details

Toyota Motor Sales, U.S.A., Inc.
19001 South Western Avenue
Torrance, CA 90501
(310) 468-4000

Previous versions of these documents should be discarded.

To: All Toyota Dealer Principals, Service Managers, Parts Managers

Subject: Safety Recall A0M – Rubber Seal (Brake Master Cylinder Cup)
Certain 2005 through 2006 Model Year Toyota Avalon Vehicles &
Certain 2004 through 2006 Model Year Highlander (Non Hybrid) Vehicles

As communicated on October 21, 2010, Toyota filed a Defect Information Report (DIR) with the National Highway Traffic Safety Administration (NHTSA) informing the agency of our intent to conduct a voluntary Safety Recall on certain '05 through '06 Model Year Avalon and certain '04 through '06 Model Year Highlander (Non-Hybrid) Vehicles to replace a rubber seal (the Brake Master Cylinder Cup) located at the rear of the brake master cylinder.

Background

- During vehicle assembly, Toyota uses brake fluids containing polymers that act as lubricants for certain brake system components. If replacement brake fluid is used that does not contain such polymers, or contain only small amounts, a part of the rubber seal (Brake Master Cylinder Cup) located at the rear of the brake master cylinder may become dry, and the rubber seal may curl during movement of the piston. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp.
- If the vehicle continues to be operated in this condition, the brake pedal feel could change, and braking performance could eventually begin to gradually degrade. If the warnings provided by the lamp illumination and the change in pedal feel are not heeded, a vehicle crash could occur.
- Toyota original brake fluid which is applied at the manufacturing plant contains polymers and does not cause this phenomenon

Safety Recall Remedy

Toyota dealers will replace the rubber seal (Brake Master Cylinder Cup) with a newly designed one at **no charge** to the vehicle owners.

1. Owner Notification Mailing Date

The owner notification will commence in mid-November 2010 approximately one week following the dealer notification. The letters will be sent over several months consistent with parts availability and repair capacity.

Only owners of the vehicles covered by this Safety Recall will be notified. If you are contacted by an owner, who has not yet received a notification, please ***verify eligibility by confirming through Dealer Daily/TIS prior to performing the repair***. Dealers should perform the Safety Recall as outlined in the Technical Instructions located on TIS.

2. Dealer Summary Reports

Summary Reports containing the ***number*** of covered vehicles in your dealership's primary marketing area (PMA) have been enclosed in the dealer package.

3. Number and Identification of Covered Vehicles

This Safety Recall covers approximately 115,800 Toyota Avalon (2005 through 2006 model year) and approximately 285,500 Toyota Highlander (2004 through 2006 model year) vehicles in the U.S.

Model	WMI	Year	VIN Range	
			VDS	Range
Avalon	4T1	2005	BK36B	U001003 - U062426
		2006	BK36B	U042154 - U124198
Highlander	JTE	2004	DD21A	0073058 - 0105659
			DP21A	0001001 - 0043214
			ED21A	0025894 - 0031832
			EP21A	0001008 - 0067233
			GD21A	0073656 - 0105684
			GP21A	0001006 - 0043210
			HD21A	0025363 - 0033057
		2005	DD21A	0105687 - 0132243
			DP21A	0043215 - 0091384
			ED21A	0033309 - 0039278
			EP21A	0067234 - 0136405
			GD21A	0105182 - 0132242
			GP21A	0042673 - 0091386
			HD21A	0033060 - 0040125
		2006	DD21A	0132256 - 0139663
			DP21A	0091388 - 0102288
			ED21A	0040139 - 0041931
			EP21A	0136406 - 0153766
			GD21A	0132244 - 0139662
			GP21A	0090882 - 0102287
			HD21A	0040128 - 0042017

NOTE:

- Owners do not require the owner notification for the remedy to be performed. If your dealership is contacted by an owner who has not yet received a notification or did not bring it, please ***verify eligibility and completion status by confirming through Dealer Daily/TIS prior to performing the remedy***.
- Dealers should perform the remedy as outlined in the Technical Instructions found on TIS.

4. Remedy Procedures

Refer to TIS for the appropriate Technical Instructions, and for additional information.

Conduct all applicable Safety Recall and Service Campaigns on the vehicle during the time of appointment. Refer to each specific recall and/or campaign for specific instructions.

5. Brake Fluid

Chemical Part No.	Chemical Name	Qty/Unit
00475-1BF03	Toyota Genuine DOT 3 Brake Fluid (pint)	3

NOTE:

- Toyota Genuine DOT 3 Brake Fluid can be ordered through the Toyota Chemical Program and will be drop shipped from AMREP.

6. Parts Ordering

The repair will require the usage of Toyota Rubber Grease (1 gram/vehicle) and a Rubber Seal Kit (Brake Master Cylinder Cup Kit). These parts can be ordered through your dealership's facing PDC.

Part No.	Part Name	Qty/Unit
08887-01206	Toyota Rubber Grease (100 grams)	1 tube = 100 vehicles (1 gram/vehicle)

NOTE:

- Each dealership will be allocated two tubes at the start of the Safety Recall. They will be charged to the dealer's Parts Account.
- The Toyota Rubber Grease will be placed on Manual Allocation Control. Each dealership will be permitted to order additional tubes at a rate of one tube per week.

Model	Part No.	Part Name	Qty/Unit
Avalon / Highlander	04000-33158	Rubber Seal Kit (Brake Master Cylinder Cup Kit)	1
The kit above includes the following parts: 90029-20059 – Rubber Seal (Cylinder Cup) = Quantity 1 90947-01322 = O-Ring = Quantity 1 Wire Tie = Quantity 1			

NOTE:

- Dealers will receive a small initial stock quantity beginning Wednesday, November 10, 2010. These orders will be charged to the dealer's Parts Account.
- Maximum daily order quantity = 10 pieces per day up to dealers total allocation quantity.
- The total allocation quantity is the dealer's repair order percentage x PDC affected UIO.
- Dealers requiring additional inventory above their total allocation quantity must contact their Facing PDC Customer Support Leader (CSL) and request that a Special Request Form be submitted to the NAPO Special Activities Group.
- Dealers will receive a separate communication illustrating their initial stock quantity, total allocation quantity and their daily allowable order quantity in a separate email from their facing PDC Manager.

IMPORTANT PARTS ORDERING REMINDER

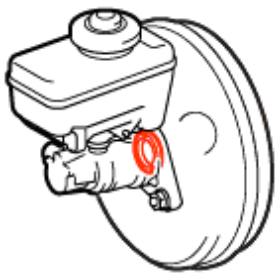
Effective March 1, 2009, Safety Recall, Service Campaign (SSC/LSC) and Customer Support Program (CSP) parts do not earn Parts Return Credit Accrual and are not returnable under the Monthly Return Program. It is recommended that you order these parts based on appointments or immediate customer needs using a "Sell One-Buy One" ordering pattern. Please refer to PANT Bulletin 09-12 for additional details.

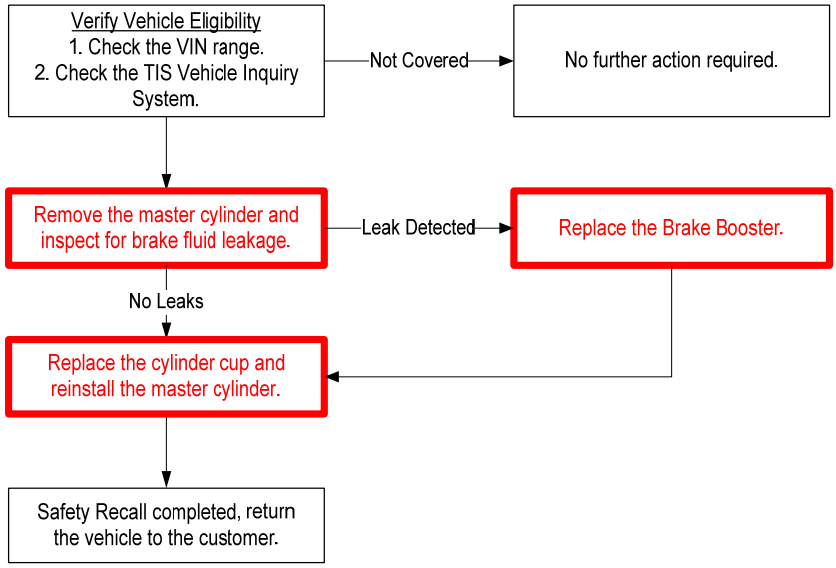
A UIO matrix by state is provided to inform your dealership of the number of vehicles in your state.

ST	UIO	ST	UIO	ST	UIO	ST	UIO	ST	UIO	ST	UIO
AK	479	FL	27,678	LA	5,933	NC	15,135	OK	3,071	VA	14,983
AL	5,378	GA	13,023	MA	16,461	ND	575	OR	4,251	VT	892
AR	2,958	HI	241	MD	13,013	NE	1,708	PA	15,972	WA	7,623
AZ	7,208	IA	3,137	ME	1,796	NH	3,031	RI	1,889	WI	6,205
CA	57,705	ID	1,332	MI	4,980	NJ	15,028	SC	6,910	WV	1,628
CO	6,586	IL	16,913	MN	6,232	NM	2,015	SD	699	WY	575
CT	5,952	IN	5,207	MO	5,487	NV	3,335	TN	7,220		
DC	554	KS	3,134	MS	2,682	NY	21,097	TX	24,494		
DE	1,313	KY	5,609	MT	951	OH	10,819	UT	2,575		

7. Warranty Processor Instructions

Please note the following for this Safety Recall:





The operation codes to be used for this Safety Recall are:

Safety Recall	Model	Op. Code	Description	Flat Rate Hour
A0M	Avalon/ Highlander	0516K1	Replace Rubber Seal (Brake Master Cylinder Cup)	*1.9 hr/vehicle*

- The above flat rate time includes 0.1 hour for administrative cost per unit.
- See the Appendix for additional reimbursement instructions in the event brake fluid leakage into the brake booster is found.

Available Sublets:

- Rental Car: Use sublet type "RT" for Op. Code 0516K1. Customer rental car through the Toyota-Rent-A-Car (TRAC) Program is available for a maximum of ***one day*** at a maximum rate of $35 per day.
- Toyota Genuine Rubber Grease: Up to $1.00 per vehicle may be claimed for the use of Toyota Genuine Rubber Grease. Use sublet type “OF” for Op. Codes 0516K1.
- Brake Fluid: Toyota Genuine DOT 3 Brake Fluid (00475-1BF03) may be claimed up to 3 pints under Op. Code 0516K1.

8. Customer Handling

Customers who receive the owner letter may contact your dealership with questions regarding the letter and/or Safety Recall remedy. Please welcome them to your dealership and answer any questions that they may have. A Q&A is provided to assure a consistent message is communicated.

Customers with additional questions or concerns are asked to please contact the Toyota Customer Experience Center (1-888-270-9371).

9. Media Contacts

For ***News media inquiries only***:
Due to the nature of this Safety Recall, it is imperative that all media contacts (local and national) receive a consistent message. In this regard, ***all media contacts*** must be directed to Brian Lyons (310) 468-2552 in Corporate Communications. (Please do not provide these numbers to customers or direct dealership associates to call).

Please review this entire package with your Service and Parts staff to familiarize them with the proper step-by-step procedures required to implement this Safety Recall.

Thank you for your cooperation.
TOYOTA MOTOR SALES, U.S.A., INC.

A P P E N D I X

If brake fluid has leaked into the brake booster and the technician has determined that the brake booster needs to be replaced (refer to the Technical Instructions for brake booster judgment criteria); the following parts and Operation Codes will need to be utilized:

1. Part number

The necessary parts can be ordered through your dealership's facing PDC. Parts have been placed on Manual Allocation and will be released daily per the dealer repair order percentage PDC affected UIO. Dealers will receive a separate communication illustrating their daily allowable order quantity and maximum order allocation amount in a separate email from their facing PDC Manager.

Model	Part No.	Part Name	Qty/Unit
Avalon	44610-07121	Brake Booster Assy	1
	44785-07010	Brake Booster Gasket	1
	90468-16035	Clip	1
Highlander 4 Cylinder Engine	44610-48271	Brake Booster Assy	1
	44785-16020	Brake Booster Gasket	1
	90468-16142	Clip	1
Highlander 6 Cylinder Engine	44610-48271	Brake Booster Assy	1
	44785-07010*	Brake Booster Gasket	1
	90468-16142	Clip	1
	17176-20020*	Air Surge Tank to Intake Manifold Gasket	1
	22271-20040	Throttle Body Gasket	1

Updated 12/1/2010

2. Operation Codes:

Model	Op. Code	Description	Flat Rate Hour
Avalon	0516K2	Replace the Rubber Seal (Brake Master Cylinder Cup) ***and*** Brake Booster Assembly	*3.1 hr/vehicle*
Highlander 4 Cylinder Engine	0516K4	Replace the Rubber Seal (Brake Master Cylinder Cup) ***and*** Brake Booster Assembly	*2.8 hr/vehicle*
Highlander 6 Cylinder Engine	0516K5	Replace the Rubber Seal (Brake Master Cylinder Cup) ***and*** Brake Booster Assembly	*3.8 hr/vehicle*

- The above flat rate time includes 0.1 hour for administrative cost per unit.

Available Sublets:

- Rental Car: Use sublet type "RT" for Op. Code 0516K2, 0516K4, or 0516K5. Customer rental car through the Toyota-Rent-A-Car (TRAC) Program is available for a maximum of ***one day*** at a maximum rate of $35 per day.
- Toyota Genuine Rubber Grease: Up to $1.00 per vehicle may be claimed for the use of Toyota Genuine Rubber Grease. Use sublet type "OF" for Op. Codes 0516K2, 0516K4, or 0516K5.
- Brake Fluid: Toyota Genuine DOT 3 Brake Fluid (00475-1BF03) may be claimed up to 3 pints under Op. Code 0516K2, 0516K4, or 0516K5.

The usage of these Part Numbers and Op. Codes will be closely monitored. Inappropriate usage will result in the claim being debited.

TOYOTA

Safety Recall Campaign A0M
Certain '05 through '06 Model Year Avalon and Certain '04 through '06 Model Year Highlander (Non Hybrid)
Brake Master Cylinder Cup – Q&A

Q1: What is the condition?

A1: During vehicle assembly, Toyota uses brake fluids containing polymers that act as lubricants for certain brake system components. If replacement brake fluid is used that does not contain such polymers, or contain only small amounts, a part of the rubber seal (Brake Master Cylinder Cup) located at the rear of the brake master cylinder may become dry, and the rubber seal may curl during movement of the piston. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp.

If the vehicle continues to be operated in this condition, the brake pedal feel could change, and braking performance could eventually begin to gradually degrade. If the warnings provided by the lamp illumination and the change in pedal feel are not heeded, a vehicle crash could occur.

Toyota original brake fluid which is applied at the manufacturing plant contains polymers and does not cause this phenomenon.

Q2: *What is the cause of this condition?*

A2: If replacement brake fluid is used that does not contain polymers, or that contains only small amounts, a part of the rubber seal (Brake Master Cylinder Cup) located at the rear of the brake master cylinder may become dry, and the seal may curl during movement of the piston. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp.

Q3: What is a Brake Master Cylinder and what purpose does the Brake Master Cylinder Cup provide?

Q3: The vehicles covered by this Safety Recall Campaign utilize a hydraulic system to slow and stop the vehicle under normal braking conditions. When the brakes are applied, the master cylinder converts the non-hydraulic pressure, applied to the brake pedal, into hydraulic pressure used in the braking system.

The Brake Master Cylinder Cup is a seal located inside the master cylinder that allows the piston to move back and forth in the cylinder while preventing fluid from escaping past the piston.

Q4: Are there any warnings that this condition exists?

A4: Yes. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp.

If the vehicle continues to be operated in this condition, the brake pedal feel could change, and braking performance could eventually begin to gradually degrade. If the warnings provided by the lamp illumination and the change in pedal feel are not heeded, a vehicle crash could occur.

Q5: *Which and how many vehicles are covered by this Safety Recall Campaign?*

A5:

Model Year	Model Name	Approx UIO
2005 – 2006	Avalon	115,800
2004 – 2006	Highlander	285,500

Q6: Are there any other Toyota or Lexus vehicles involved?

A6: Yes, there are approximately 335,300 Lexus vehicles affected by this condition (see chart below):

Model Year	Model Name	Approx UIO
2006	GS 300	28,700
2006	IS 250	8,200
2006	IS 350	12,400
2004 – 2006	RX 330	286,000

Q7: What is the production period of the covered vehicles?

A7: The vehicles covered by this Safety Recall Campaign were produced from early-February 2003 to late February 2006.

- Toyota vehicles covered by this Safety Recall Campaign were produced from late May 2003 to late February 2006.
- Lexus vehicles covered by this Safety Recall Campaign were produced from early-February 2003 to mid-February 2006.

Q8: *What is Toyota going to do?*

A8: Owners of vehicles covered by this Safety Recall will receive a notification by first class mail beginning in mid-November 2010. The owner notifications will be mailed over several months consistent with parts availability and repair capacity. Any Toyota dealer will replace the rubber seal (Brake Master Cylinder Cup) with a newly designed one at **NO CHARGE** to the vehicle owner.

If during the rubber seal replacement, it is determined that brake fluid leakage has damaged the brake booster it will also be replaced at **NO CHARGE** to the vehicle owner.

Q8a: *What if a customer has the brake warning lamp illuminated?*

A8a: The brake pedal feel and braking performance does not change immediately after the brake warning lamp illuminated. However, we request such a customer to make an appointment with a Toyota dealer for diagnosis and appropriate repair.

Q9: *How long will the repair take?*

A9: The repair will take approximately 2 hours. However, depending upon the dealer's work schedule, it may be necessary for the owner to make the vehicle available for a longer period of time.

Q*10: *What if an owner has previously paid for repairs for this condition?

A10: Owners that have previously paid for the replacement of the Brake Master Cylinder due to brake fluid leakage from the rubber seal (Brake Master Cylinder Cup) should refer to the owner letter for instructions regarding reimbursement consideration. If during the replacement of the brake master cylinder, it was determined that the brake booster also required replacement due to damage caused by this specific condition, Toyota will reimburse customers for both components.

Q11: *What if an owner has additional questions or concerns?*

A11: Owners with questions or concerns are asked to please contact the Toyota Customer Experience Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, or Saturday 7:00 am through 4:00 pm Pacific Time.

Certain 2005 through 2006 Avalon Vehicles & Certain 2004 through 2006 Highlander Vehicles
Brake Master Cylinder Cup (Rubber Seal)
Safety Recall Notice

[VIN]

Dear Toyota Owner:

This notice is being sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Toyota has decided that a defect, which relates to motor vehicle safety, exists in a rubber seal (the Brake Master Cylinder Cup) on certain 2005 through 2006 model year Avalon vehicles and certain 2004 through 2006 model year Highlander (Non Hybrid) vehicles.

What is the condition?

During vehicle assembly, Toyota uses brake fluids containing polymers that act as lubricants for certain brake system components. If replacement brake fluid is used that does not contain such polymers, or contains only small amounts, a part of the rubber seal (the Brake Master Cylinder Cup) located at the rear of the brake master cylinder may become dry, and the rubber seal may curl during movement of the piston. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp [BRAKE or ⓘ].

If the vehicle continues to be operated in this condition, the brake pedal feel could change, and braking performance could eventually begin to gradually degrade. If the warnings provided by the lamp illumination and the change in pedal feel are not heeded, a vehicle crash could occur.

What is Toyota going to do?

Any Toyota dealer will replace the rubber seal (Brake Master Cylinder Cup) with a newly designed one at **NO CHARGE** to you.

If during the rubber seal replacement, it is determined that brake fluid leakage has damaged the brake booster it will also be replaced at **NO CHARGE** to you.

What should you do?

This is an important Safety Recall

Please contact your authorized Toyota dealer to make an appointment to have this important remedy performed on your vehicle as soon as possible.

The rubber seal (Brake Master Cylinder Cup) replacement will take approximately two hours. However, depending on the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

In the event the brake warning light has illuminated and/or you notice the feel of the brake pedal change, please verify the brake fluid level in the reservoir. If the brake fluid level is low it is an indication that brake fluid is leaking. Please add DOT3 brake fluid and make an appointment to have this remedy completed immediately.

You do not need an owner letter to have this recall completed; however, to assist the dealer in confirming vehicle eligibility, we request that you present this notice at the time of your service appointment.

If you would like to update your vehicle ownership or contact information, please go to www.toyota.com/ownersupdate. You will need your full 17-digit Vehicle Identification Number (VIN) to input the new information.

What if you have other questions?

Your local Toyota dealer will be more than happy to answer any of your questions and set up an appointment to perform this Safety Recall. If you require further assistance, you may contact the Toyota Customer Experience Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, Saturday 7:00 am through 4:00 pm Pacific Time.

If you believe that the dealer or Toyota has failed or is unable to remedy the defect within a reasonable time, you may submit a complaint to the Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue S.E., Washington, DC 20590 or call the toll free Vehicle Safety Hot Line at 1-888-327-4236 (TTY: 1-800-424-9153), or go to http://www.safercar.gov.

What if you have previously paid for repairs for this condition?

If you have previously paid for repairs to address this specific condition, please mail a copy of the repair order, proof-of-payment, and proof-of-ownership to the following address for reimbursement consideration:

Toyota Motor Sales, U.S.A., Inc
Toyota Customer Experience, WC10
19001 South Western Avenue, Torrance, CA 90509

Include your name, address, and telephone number(s) in your request. Please allow us 6-8 weeks to process your request.

If you are a vehicle lessor, Federal law requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the vehicle lessee within ten days of your receipt of this letter.

Thank you for driving a Toyota.

Sincerely,
TOYOTA MOTOR SALES, U.S.A., INC.

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL A0M

RUBBER SEAL (BRAKE MASTER CYLINDER CUP) REPLACEMENT

2004 – 2006 MODEL YEAR HIGHLANDER
2005 – 2006 MODEL YEAR AVALON

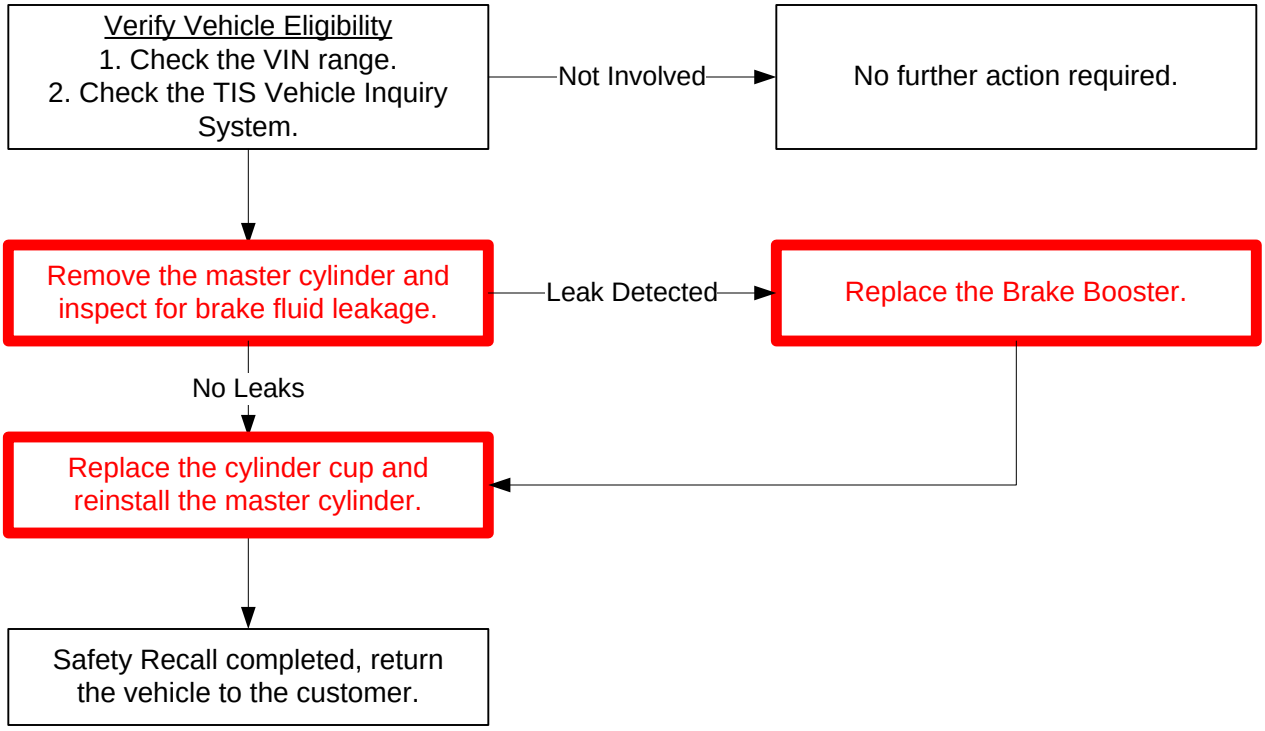
REVISED NOVEMBER 30, 2010

TECHNICAL INSTRUCTION REVISION NOTICE:

- **November 15, 2010:**
  - **Additional information was added to Work Procedure Section B, step 6, "SERVICE TIP FOR MASTER CYLINDER REMOVAL"**
- **November 18, 2010:**
  - **The table in Work Procedure Section C, step 2, "INSPECT FOR BRAKE FLUID LEAKAGE" was revised to include new information.**
  - **Work Procedure Section D, "SECONDARY INSPECTION FOR BRAKE FLUID LEAKAGE" was added.**
- **November 30, 2010:**
  - **The Highlander 6 Cylinder Air Surge Tank to Intake Manifold Gasket part number was corrected in the Appendix, refer to the "BRAKE BOOSTER PART NUMBER INFORMATION" table for details.**

Previous versions of this Technical Instruction should be discarded.

I. OPERATION FLOWCHART



II. IDENTIFICATION OF AFFECTED VEHICLES

A. AFFECTED VIN RANGE

Model	WMI	Year	VIN Range	
			VDS	Range
Highlander	JTE	2004	DD21A	0073058 – 0105659
			DP21A	0001001 – 0043214
			ED21A	0025894 – 0031832
			EP21A	0001008 – 0067233
			GD21A	0073656 – 0105684
			GP21A	0001006 – 0043210
			HD21A	0025363 – 0033057
		2005	DD21A	0105687 – 0132243
			DP21A	0043215 – 0091384
			ED21A	0033309 – 0039278
			EP21A	0067234 – 0136405
			GD21A	0105182 – 0132242
			GP21A	0042673 – 0091386
			HD21A	0033060 – 0040125
		2006	DD21A	0132256 – 0139663
			DP21A	0091388 – 0102288
			ED21A	0040139 – 0041931
			EP21A	0136406 – 0153766
			GD21A	0132244 – 0139662
			GP21A	0090882 – 0102287
			HD21A	0040128 – 0042017

AFFECTED VIN RANGE CONTINUED…

Model	WMI	Year	VIN Range	
			VDS	Range
Avalon	4T1	2005	BK36B	U001003 – U062426
		2006	BK36B	U042154 – U124198

NOTE:
- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

A. PARTS

Part Number	Part Description	Quantity
04000-33158	Rubber Seal (Brake Master Cylinder Cup) Kit*	1

* The kit above includes the following parts:

90029-20059	Rubber Seal (Cylinder Cup)	Quantity 1
90947-01322	O-ring	Quantity 1
—	Wire Tie	Quantity 1

B. TOOLS & EQUIPMENT

- Flash Light
- Protective Eyewear
- Standard Hand Tools
- Techstream
- Torque Wrench
- Workbench with Vise

C. MATERIALS & SUPPLIES

- Paper Towels
- Plastic Bag
- Toyota Genuine DOT 3 Brake Fluid = 00475-1BF03 = Quantity 3
- Toyota Rubber Grease = 08887-01206 = Quantity 1**

** One tube of Toyota Rubber Grease can be used on approximately 100 vehicles.

IV. BACKGROUND

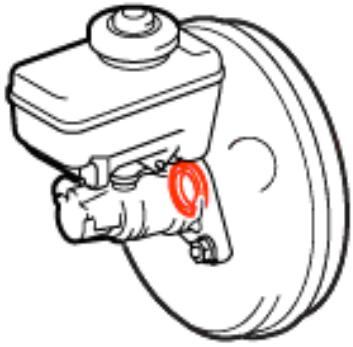
During vehicle assembly, Toyota uses brake fluids containing polymers that act as lubricants for certain brake system components. If replacement brake fluid is used that does not contain such polymers, or contain only small amounts, a part of the rubber seal (Brake Master Cylinder Cup) located at the rear of the brake master cylinder may become dry, and the rubber seal may curl during movement of the piston. If this occurs, a small amount of the brake fluid could slowly leak from the seal into the brake booster, resulting in illumination of the brake warning lamp.

If the vehicle continues to be operated in this condition, the brake pedal feel could change, and braking performance could eventually begin to gradually degrade. If the warnings provided by the lamp illumination and the change in pedal feel are not heeded, a vehicle crash could occur.

Toyota original brake fluid which is applied at the manufacturing plant contains polymers and does not cause this phenomenon.

V. WORK PROCEDURE

A. COMPONENTS



B. WORK PROCEDURE PRECAUTIONS

READ and FOLLOW all procedure PRECAUTIONS and INSTRUCTIONS before beginning work on the vehicle!

1. HANDLING OF REPLACEMENT PARTS

- All removed parts that are NOT reused should be rendered unusable or marked to prevent them from being reinstalled.

2. PREVENT DIRT, DEBRIS AND FOREIGN MATTER FROM ENTERING THE BRAKE SYSTEM

- DO NOT use shop cloths or cloth gloves, doing so may allow pieces of thread to enter the master cylinder.
- Keep your hands clean to prevent dirt, debris and foreign matter from entering the master cylinder during the work procedure.
- Take measures to prevent dirt, debris and foreign matter from entering the brake system during the work procedure.

3. DO NOT USE METAL TOOLS

- Using metal tools to remove or install the rubber o-ring and cup will damage the metal grooves of the master cylinder.

4. HANDLING AND INSPECTION OF BRAKE TUBES

- DO NOT deform or damage the brake tubes during the removal and installation process.
- After reinstalling the brake tubes, check to make sure they DO NOT interfere with each other.

5. HANDLING OF BRAKE FLUID

- DO NOT reuse brake fluid.
- Brake fluid damages painted surfaces. Make sure to immediately clean off any spilled brake fluid by rinsing the area with water.
- Bleeding the brake system may cause fluid to spray outwards, so make sure to wear protective eyewear when performing this procedure.

6. SERVICE TIP FOR MASTER CYLINDER REMOVAL

- Negative pressure inside the booster may cause the piston to come off when removing the master cylinder. This may result in brake fluid leakage into the booster.
- Release the negative pressure from the booster prior to removing the master cylinder. Do this by pressing the brake pedal all the way ten times with the engine off. Once completed, slowly remove the master cylinder from the booster.

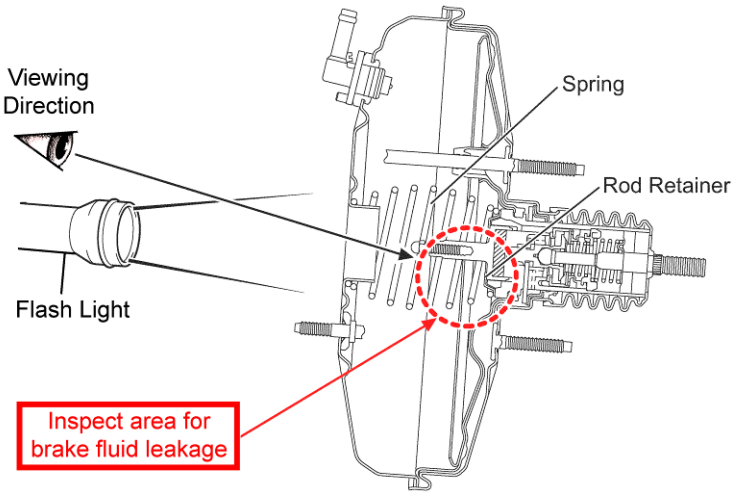
C. PRELIMANARY INSPECTION FOR BRAKE FLUID LEAKAGE

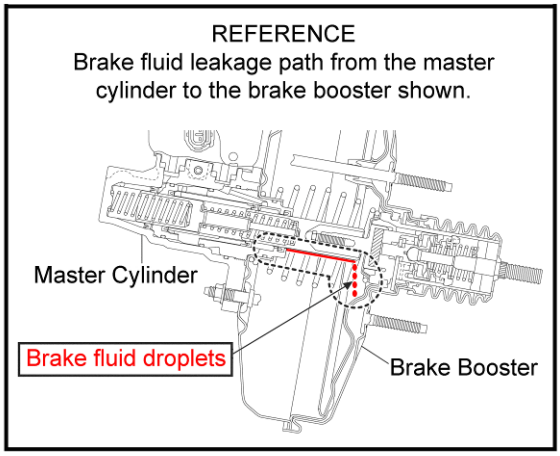
1. REMOVE THE MASTER CYLINDER

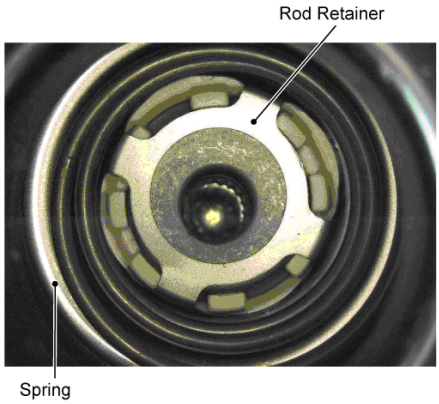
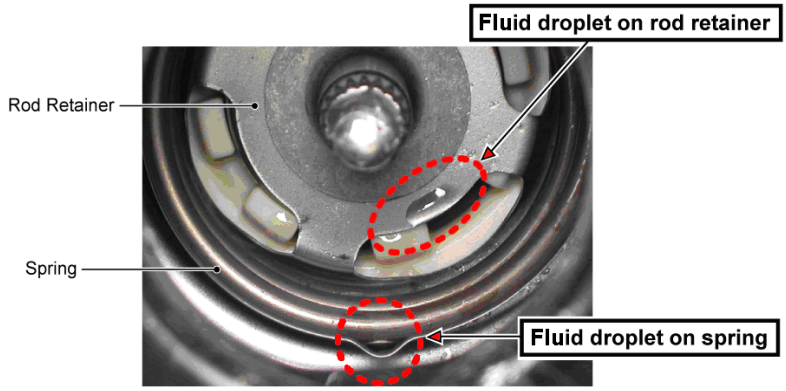
a) Follow the Brake Master Cylinder removal procedure outlined in the repair manual on TIS for the vehicle you are working on.

2. VISUAL INSPECTION FOR BRAKE FLUID LEAKAGE

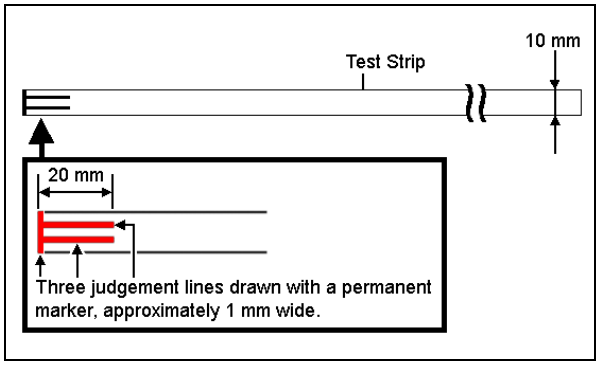
a) As shown below, visually inspect the booster for signs of brake fluid leakage from the master cylinder.





Brake Booster Judgment Criteria	Result
No fluid found. 	**Booster is OK** Replace the cylinder cup as outlined in section F.
Fluid droplet(s) are visible on the rod retainer and/or spring. 	**Booster requires additional inspection** Proceed to section D “SECONDARY INSPECTION FOR BRAKE FLUID LEAKAGE”

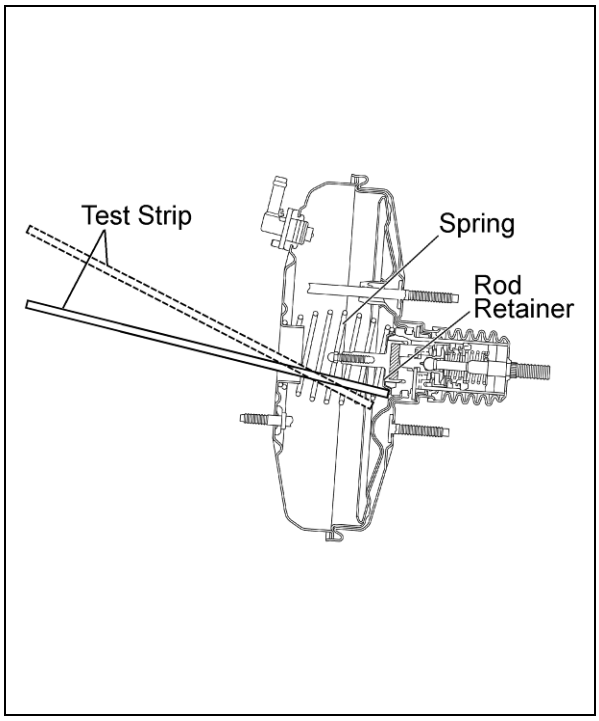
D. SECONDARY INSPECTION FOR BRAKE FLUID LEAKAGE



1. PREPARE MULTIPLE TEST STRIP

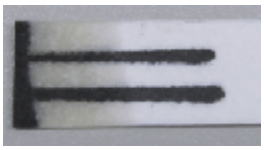
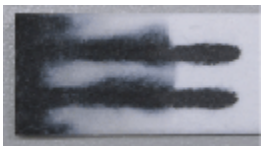
a) Using plain copy paper (letter size), cut a 20 mm (0.8 in.) wide strip length wise and fold it in half to 10 mm (0.4 in.).
b) Using a permanent marker, draw three 1 mm (0.04 in.) wide lines as shown.

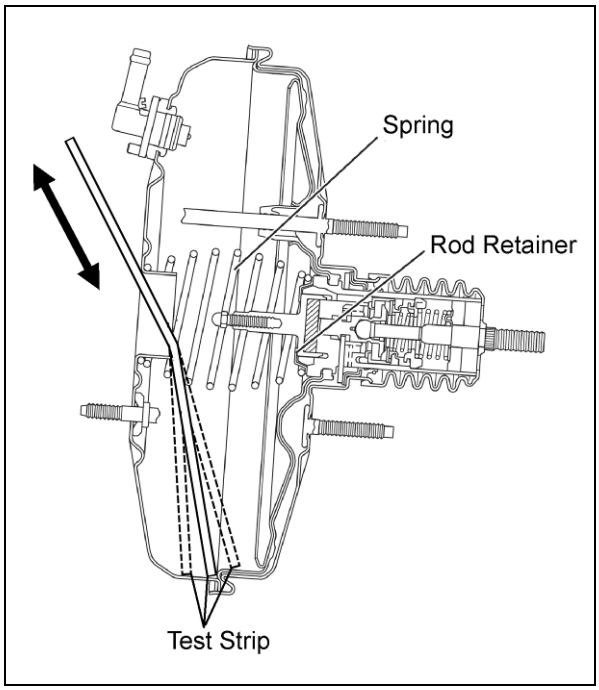
NOTE:
Prepare a test strip in advance and place it in a droplet of brake fluid to confirm how the permanent marker lines react, which will be used as a reference point.



2. BRAKE FLUID LEAK CHECK PART 1

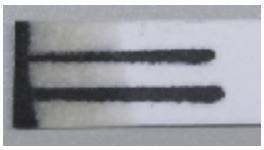
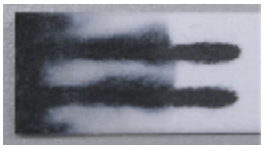
a) Insert a new test strip in the locations shown or where the fluid was found.
b) Remove the test strip and let it sit for 1 minute, then determine the judgement using the table below.

Judgement	Result
	Assembly oil detected. **Booster requires additional inspection** Proceed to step 3 “BRAKE FLUID LEAK CHECK PART 2”.
	Brake fluid detected. **Booster is NG** Replace the brake booster as outlined in section E. & Replace the cylinder cup as outlined in section F.



3. BRAKE FLUID LEAK CHECK PART 2

a) Insert a new test strip inside the bottom of the booster in the locations shown.
b) Remove the test strip and let it sit for 1 minute, then determine the judgement using the table below.

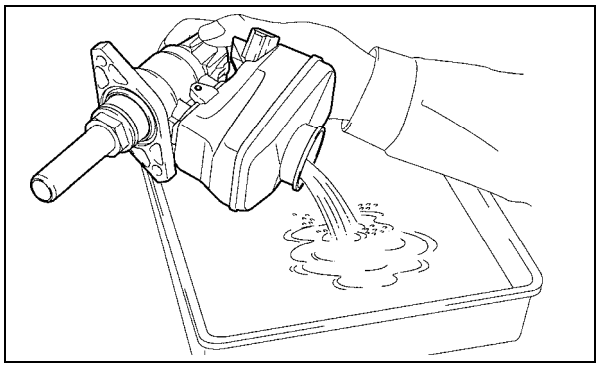
Judgement	Result
	Assembly oil detected. **Booster is OK** Replace the cylinder cup as outlined in section F.
	Brake fluid detected. **Booster is NG** Replace the brake booster as outlined in section E. & Replace the cylinder cup as outlined in section F.

E. REPLACE THE BRAKE BOOSTER (IF BRAKE FLUID LEAKAGE WAS DETECTED)

1. REPLACE THE BRAKE BOOSTER

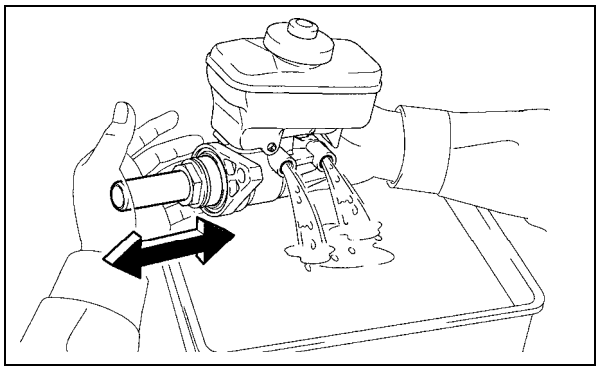
a) Follow the Brake Booster replacement procedure outlined in the repair manual on TIS for the vehicle you are working on. For brake booster part number information, please reference section VI “APPENDIX”

F. REPLACE THE RUBBER SEAL (BRAKE MASTER CYLINDER CUP)



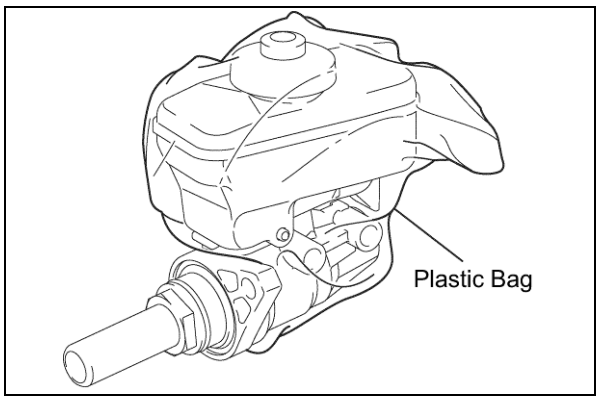
1. DRAIN THE MASTER CYLINDER BRAKE FLUID

c) Remove the reservoir cap.
d) Drain the master cylinder brake fluid and reinstall the cap.



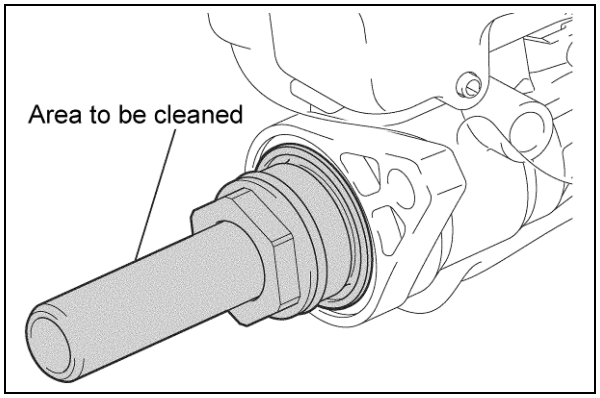
e) Discharge the brake fluid inside master cylinder by slowly moving the piston in and out for 2 complete strokes.

NOTE:
- **Pushing the piston SLOWLY will prevent brake fluid from spraying out.**
- **Make sure to wear protective eyewear when performing this procedure.**



2. COVER THE MASTER CYLINDER

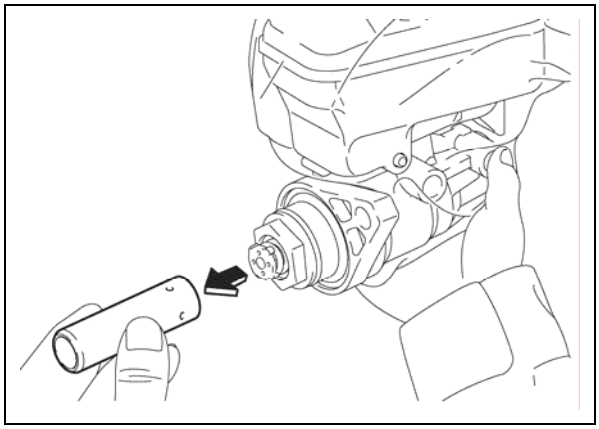
a) Cover the master cylinder with a plastic bag to prevent dirt, debris and foreign matter from entering.



3. CLEAN THE MASTER CYLINDER

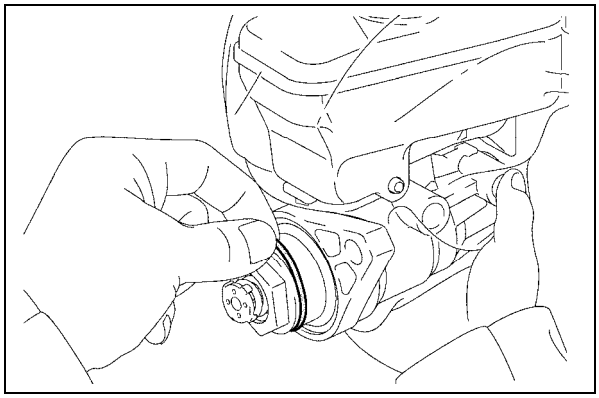
a) Clean the highlighted area shown with a paper towel to remove any dirt, debris and foreign matter.

NOTE:
DO NOT use a shop cloth, doing so may allow pieces of thread to enter the master cylinder.



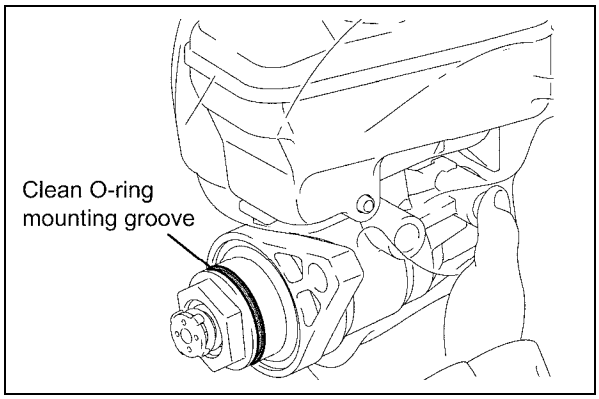
4. REMOVE THE PISTON

a) Pull off the piston by hand.
b) The piston is a precision part, so store it in a manner that will prevent it from damage, dirt, debris and foreign matter.



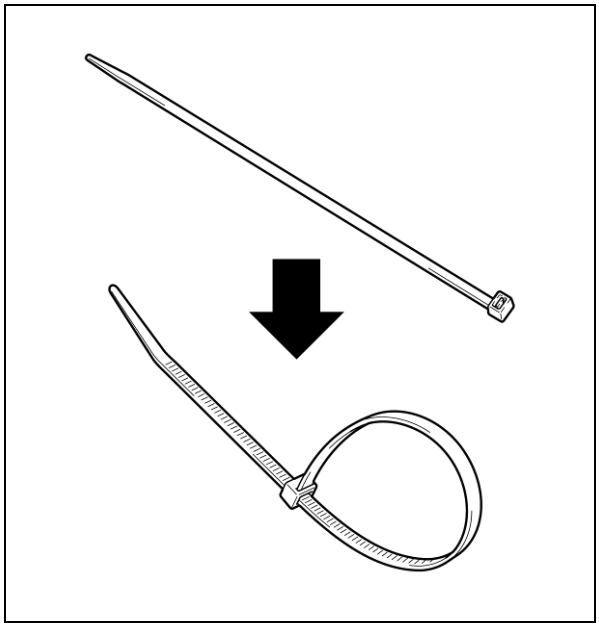
5. REMOVE THE O-RING

a) Remove the o-ring by hand.
b) Cut the o-ring to prevent it from being reused.



c) Clean the o-ring mounting groove with a paper towel.

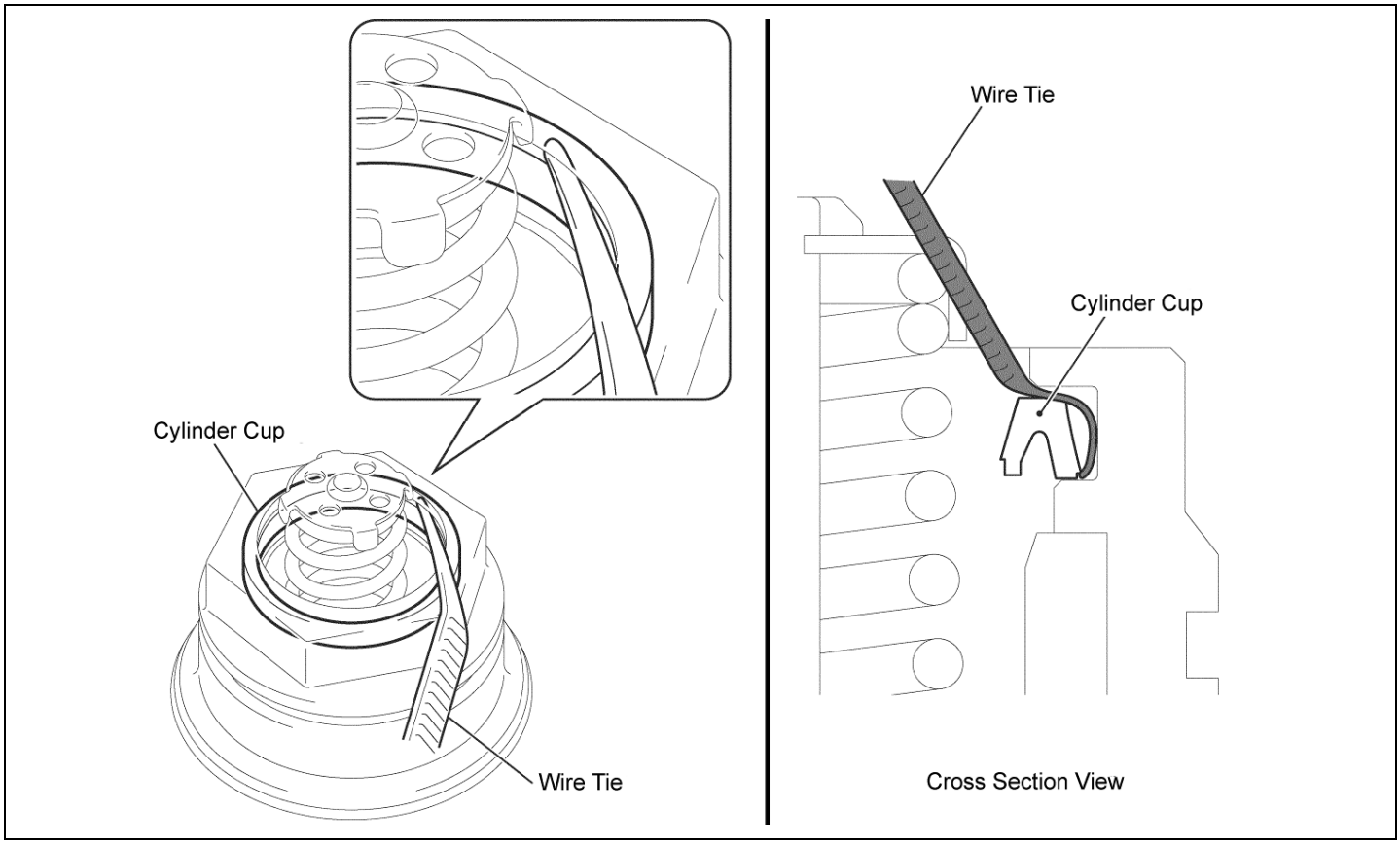
NOTE:
DO NOT use a shop cloth, doing so may allow pieces of thread to enter the master cylinder.



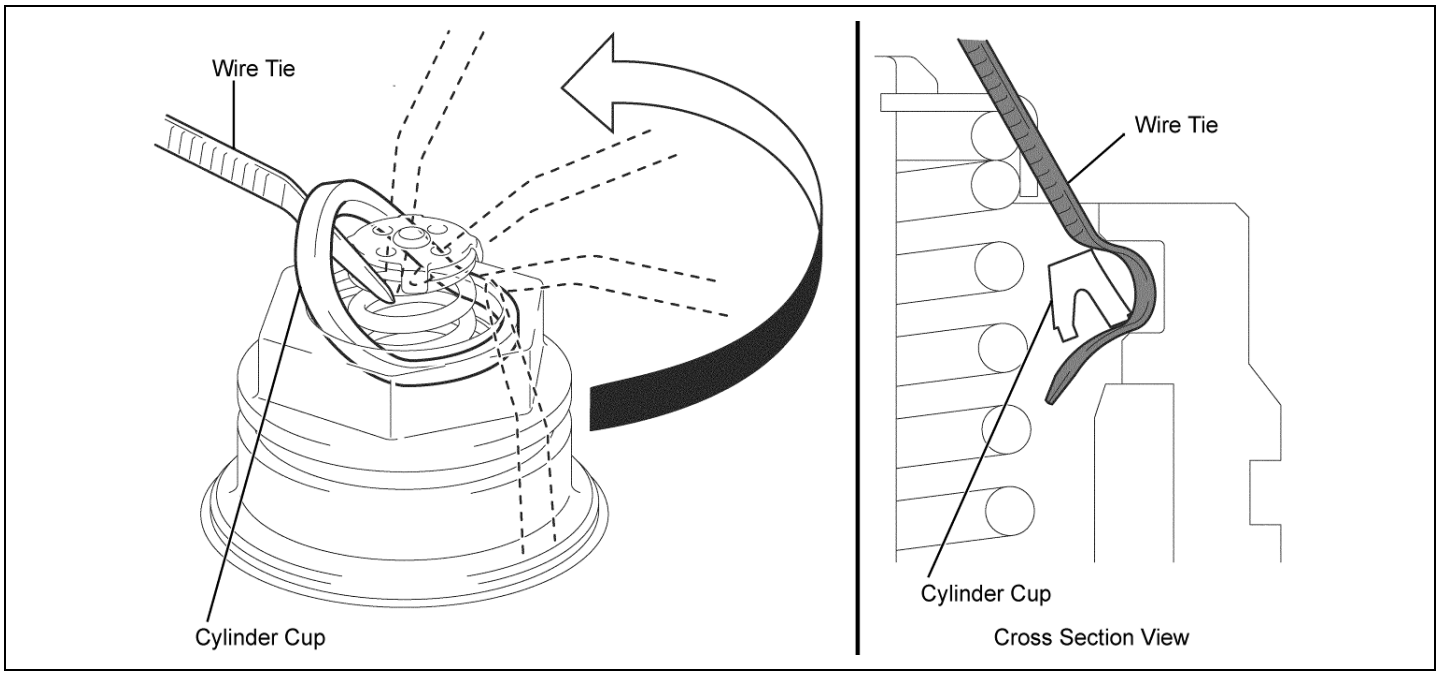
6. REMOVE THE RUBBER SEAL (BRAKE MASTER CYLINDER CUP)

a) Clean the supplied wire tie.
b) To make it easier to grip, loop the end of the wire tie as shown.

NOTE:
- **DO NOT use the wire tie more than once, doing so will decrease its effectiveness and may introduce dirt, debris and foreign matter.**
- **DO NOT cut the wire tie, doing so may introduce dirt, debris and foreign matter.**

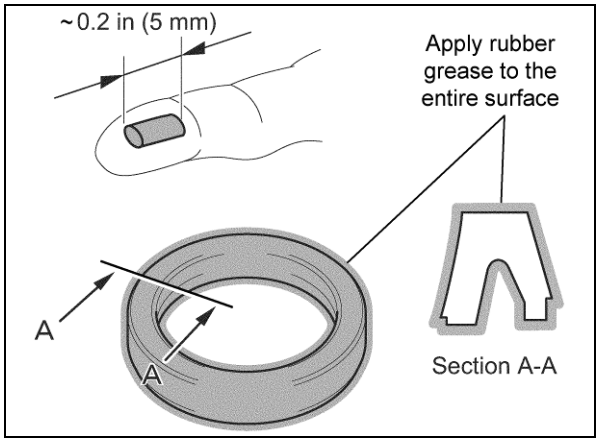


c) Insert the tip of the wire tie over the outside of the Rubber Seal (Brake Master Cylinder Cup) as shown above.



d) Keep the wire tie flat and insert it further while sliding it along the circumference, until the Rubber Seal (Brake Master Cylinder Cup) is raised and accessible.
e) Remove and cut the Rubber Seal (Brake Master Cylinder Cup) and wire tie to prevent them from being reused.

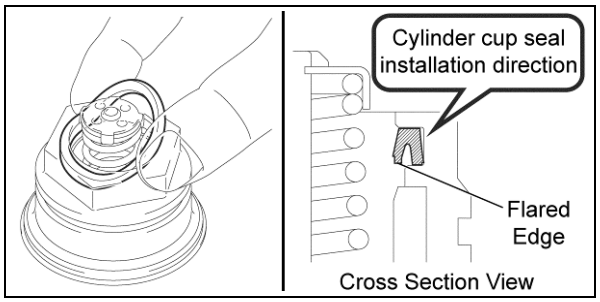
NOTE:
DO NOT clean the Rubber Seal (Brake Master Cylinder Cup) mounting groove.



7. INSTALL THE *NEW* RUBBER SEAL (BRAKE MASTER CYLINDER CUP)

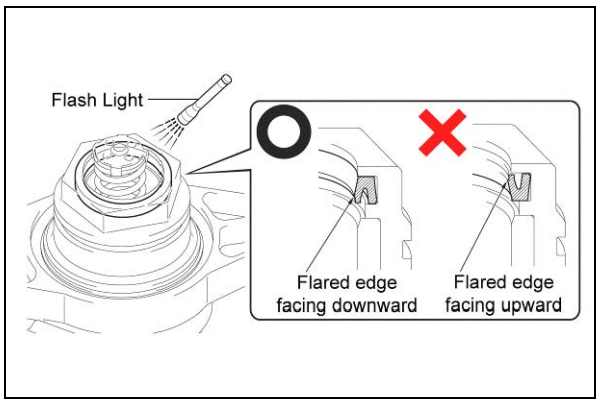
a) Apply approximately 0.5g of Rubber Grease evenly over the entire surface of the ***NEW*** Rubber Seal (Brake Master Cylinder Cup).

Rubber Grease Quantity
- **0.5g = 0.2 in / 5 mm squeezed from the tube**



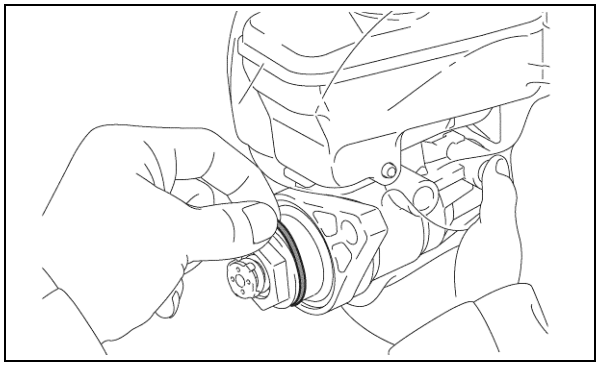
b) Install the ***NEW*** Rubber Seal (Brake Master Cylinder Cup) by hand, making sure the flared edge is facing down.

NOTE:
DO NOT damage the lip of the Rubber Seal (Brake Master Cylinder Cup).



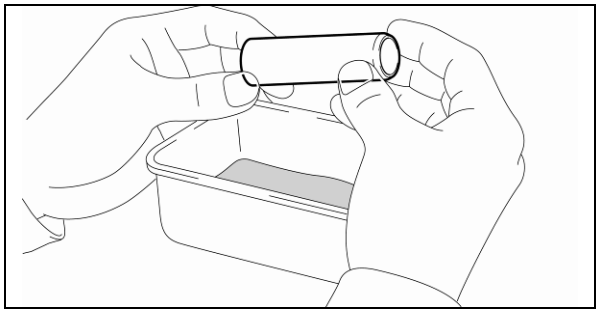
c) Confirm the positioning of the ***NEW*** Rubber Seal (Brake Master Cylinder Cup), making sure the flared edge is facing down.

NOTE:
- **Confirmation of the Rubber Seal (Brake Master Cylinder Cup) position may be difficult. To help, shine a light in the direction shown during the inspection.**
- **If the Rubber Seal (Brake Master Cylinder Cup) is installed incorrectly (flared edge facing up) it MUST be replaced with a new one.**



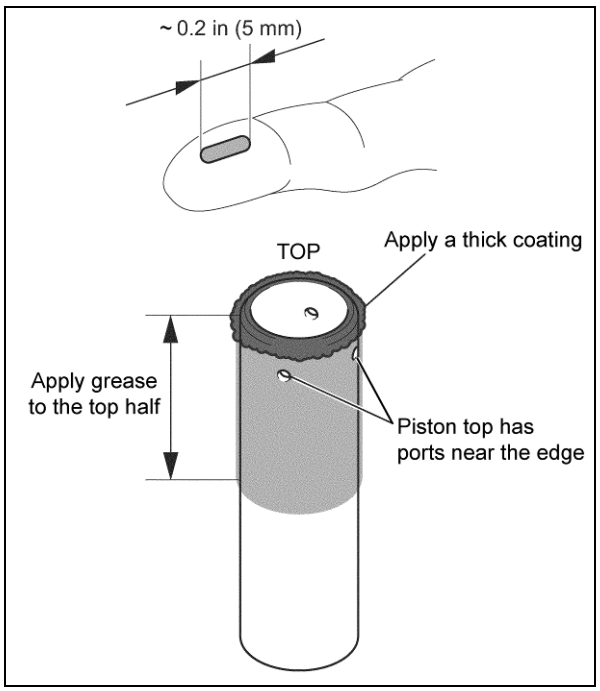
8. INSTALL THE *NEW* O-RING

a) Apply Rubber Grease to the entire surface of the ***NEW*** o-ring.
b) Install the ***NEW*** o-ring to the master cylinder, making sure it is not twisted.



9. REINSTALL THE PISTON

a) Clean the piston with brake fluid.

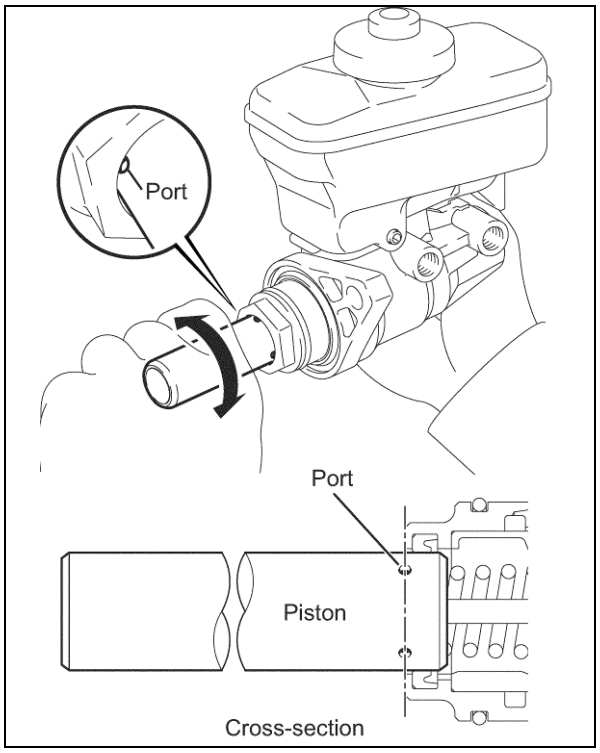


b) Apply approximately 0.5g of Rubber Grease to the piston in the 2 areas listed below, and as shown in the illustration.

i. Even coat over the top half of the piston.
ii. Thick coating around the top edge of the piston

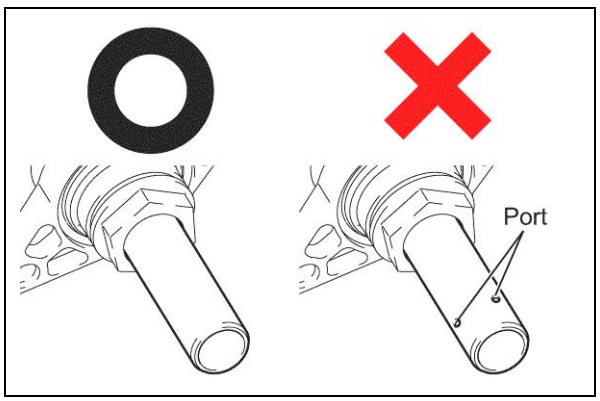
Rubber Grease Quantity

- **0.5g = 0.2 in / 5 mm squeezed from the tube**

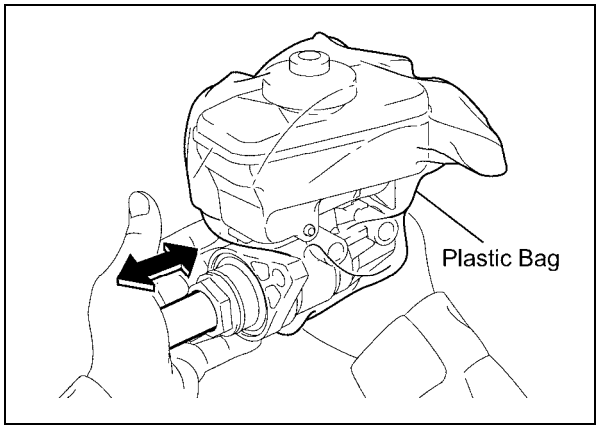


c) Gradually reinstall the piston straight into the master cylinder, until the ports line up with edge of the cylinder as shown.
d) Turn the piston 90º to the left and to the right 5 times, then gradually push the piston in until it stops.

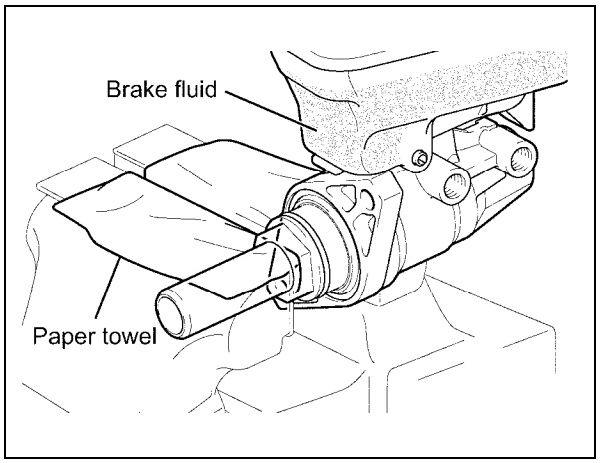
NOTE:
DO NOT insert the piston with one push, do it gradually.



e) Confirm that the piston ports are in the correct position as shown.



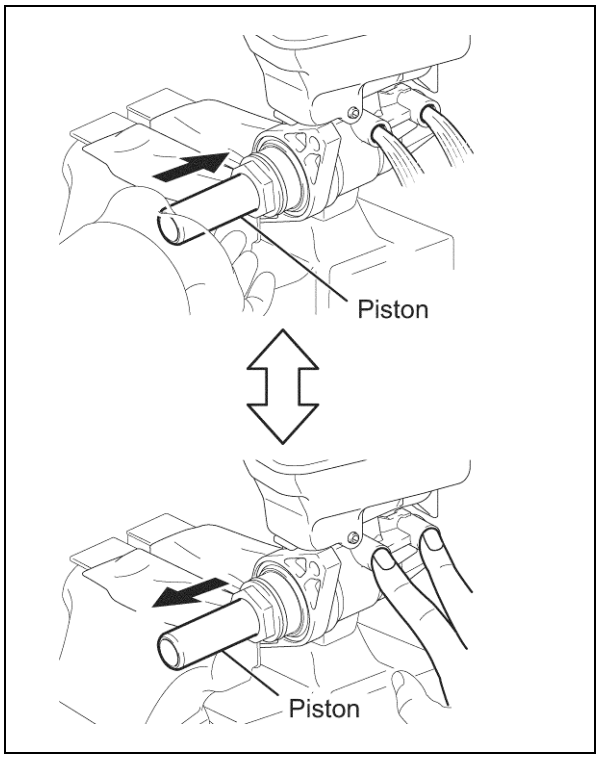
f) Move the piston in and out slowly for 2 complete strokes.
g) Remove the plastic bag.



10. BLEED THE AIR FROM THE MASTER CYLINDER

a) Secure the master cylinder to a vise padded with paper towels.
b) Fill the reservoir tank withToyota Genuine DOT 3 Brake Fluid.

NOTE:
DO NOT use a shop cloth, doing so may allow pieces of thread to enter the master cylinder.



c) Push the piston in slowly and hold it in place.
d) Plug the brake line holes with your fingers, and let the piston return to its original position.
e) Release your fingers, then push the piston in slowly and hold it in place.
f) Repeat steps d) & e) several times until the air is bleed from the master cylinder.

NOTE:
- **Pushing the piston SLOWLY will prevent brake fluid from spraying out.**
- **DO NOT allow the reservoir tank to become empty, doing so will allow air to enter the master cylinder.**
- **Make sure to wear protective eyewear when performing this procedure.**

11. REINSTALL THE MASTER CYLINDER

a) Follow the Brake Master Cylinder installation procedure as outlined in the repair manual on TIS for the vehicle you are working on.

12. BLEED THE BRAKE SYSTEM

a) Follow the Brake Fluid Bleeding procedure as outlined in the repair manual on TIS for the vehicle you are working on.

13. TEST DRIVE THE VEHICLE

- COMPLETED -

VI. APPENDIX

- **NOTE**

As required by Federal Regulations, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, ***unless requested for parts recovery return.***

- **BRAKE BOOSTER PART NUMBER INFORMATION**

MODEL	PART NUMBER	PART DESCRIPTION	QUANTITY
Avalon	44610-07121	Brake Booster Assembly	1
	44785-07010	Brake Booster Gasket	1
	90468-16035	Clip	1
Highlander 4 Cylinder	44610-48271	Brake Booster Assembly	1
	44785-07010	Brake Booster Gasket	1
	90468-16142	Clip	1
Highlander 6 Cylinder	44610-48271	Brake Booster Assembly	1
	44785-07010	Brake Booster Gasket	1
	90468-16142	Clip	1
	17176-20020	Air Surge Tank to Intake Manifold Gasket	1
	22271-20040	Throttle Body Gasket	1

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name : TOYOTA RUBBER GREASE

Supplier : COSMO OIL LUBRICANTS CO.,LTD.

Address : SHIBAURA SQUARE BLDG.,9-25,SHIBAURA,4-CHOME, MINATO-KU,TOKYO 108-0023,JAPAN

Telephone number : 03-3798-3875

Emergency telephone number 03-3798-3875

Date of preparation : 2009/11/27

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS#	% by Wt.
Base oil	9003-13-8	74~79
Thickener(Lithium soap)	7620-77-1	12~17
Additives	N/A	7~12

3. HAZARDS IDENTIFICATION

Emergency overview :

Eye : Not expected to cause prolonged or significant eye irritation.

Skin : Contact skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion : Do not swallow heedlessly.

Inhalation : Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels the recommended mineral oil mist exposure limit.

4. FIRST AID MEASURES

Eye : Flush eyes fresh with water for at least 15 minutes, then seek medical attention.

Skin : Wash contact areas thoroughly with soap and water.

Inhalation : Remove to fresh air. Cover the victim's body with blanket, rest in keeping warm, and seek medical attention immediately.

Ingestion : If swallowed, do not induce vomiting. Seek medical attention immediately. If contaminated in mouth, flush thoroughly with water.

5. FIRE-FIGHTING MEASURES

Extinguishing media : Water fog, foam, dry chemical and carbon dioxide. Do not try to put out the fire with water pillars.

Fire fighting instructions : For fires involving this materials, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Exposure Controls/Personal Protection.

Contain grease to prevent further contamination of soil, surface water or groundwater.

Clean up small spills using appropriate techniques such as solvent materials.

7. HANDLING AND STORAGE

Do not use or store near flame, spark or hot surfaces. Keep container in a cool, well-ventilated area. Keep container tightly closed when do not use. Do not weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently.

CAUTION : Do not use pressure to empty drum may rupture with explosive force.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits : No mention. ACGIH (1996~1997)

Engineering Controls : Use adequate ventilation to keep airborne concentrations of this material below the recommended exposure standard.

Personal protective equipment :

Eye/Face protection : No special eye protection is usually necessary. Where splashing is possible wear safety glasses with side shields as a good safety practice.

Skin protection : No special protective clothing is normally required. Avoid prolonged or frequently repeated skin contact with this material.

Respiratory protection : No respiratory protection is usually necessary. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards, the use of an approved respirator is required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical description : Semi-solid, light pink in color, with petroleum-like smell.

Evaporating volatility : Nil

Solubility : Insoluble in water

Flash point : >200℃ (SETA method)

Dropping point : >180℃

10. STABILITY AND REACTIVITY

Ignition point : No data available

Explosive limits : No data available

Combustibility : Combustible

Oxidizing properties : Not oxidizer

Explosion properties : Not explosive

Dust explosion properties : Not explosive

Stability : Stable.

Conditions to avoid : Keep away from heat sources which may induce thermal decomposition.

Materials to avoid : Keep away from strong oxidizing agent, such as chlorates, nitrates, peroxides, etc.

11. TOXICOLOGICAL INFORMATION

Corrosiveness : Not corrosive

Eye, skin irritation : May cause irritation under prolonged exposures.

Sensitization : No data available

Acute toxicity : ORAL LD_{50} : 5g/kg [Rat], (Estimated values)

Subacute toxicity : No data available

Carcinogenicity : **Base oil** : This base oil is not reported to be carcinogenic by NTP and IARC

Additives : No data available

Mutagenicity : No data available

Teratogenicity : No data available

12. ECOLOGICAL INFORMATION

Persistence/degradability : No data available

Bioaccumulation : No data available

Ecotoxicity : No data available

13. DISPOSAL INFORMATION

Place contaminated material in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this materials.

14. TRANSPORT INFORMATION

Transportation by sea : Not Regulated

Transportation by air : Not Regulated

UN No. : Not applicable

IMDG : Non-hazardous

IATA : Hazard Label:None

Non-hazardous for air transport

15. REGULATORY INFORMATION

U.S. INVENTORY (TSCA) : All components are listed.

JAPAN INVENTORY (MITI) : All components are listed.

16. OTHER INFORMATION

NFPA704(Health, Fire, Reactivity, Specific hazard): 0,1,0,NONE

HMIS(Health, Fire, Reactivity, Specific hazard): 0,1,0,NONE

This material safety data sheet is compiled as a reference for the safe handling of harmful chemical products.

Handlers and users are expected to assume their own responsibilities by handling different situations according to actual circumstances and with reference to this material safety date sheet.

This material safety data sheet may not be interpreted as a guarantee for safety.