



Stainless Steel Brakes Corporation

# INSTALLATION INSTRUCTIONS

A0718\* Power Steering Control Valve and Steering Adapter  
Corvette 1963 - 1982 with Power Steering

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Thank you for choosing STAINLESS STEEL BRAKES CORPORATION for your braking needs. Please take the time to read and carefully follow these instructions to insure the ease of your installation as well as the proper performance of the complete system.

Before beginning your installation, please verify you have received all the parts indicated on the packing slip. If you believe anything to be missing or incorrect, please call our Customer Service Department at 716-759-8666.

To assure your installation will go safely and smoothly, have the following items on hand to assist you:

**JACK & JACK STANDS**  
**LUG WRENCH**  
**TORQUE WRENCH**  
**SOCKET SET**  
**BRAKE CLEANER**

**WRENCH SET**  
**TUBE WRENCHES**  
**MALLET**  
**WHEEL BEARING GREASE**  
**BRAKE FLUID**

**IF YOU EXPERIENCE ANY PROBLEMS WITH THIS PRODUCT,  
CALL STAINLESS STEEL BRAKES CORPORATION  
DIRECTLY AT 716-759-8666. DO NOT RETURN THE  
PRODUCT TO THE SUPPLIER YOU PURCHASED IT FROM.**

## 1. REMOVE VALVE

- a) Raise vehicle and support it on stands so that front wheel can be turned from a full left to a full right turn.
- b) Disconnect the two hydraulic hoses from the ends of the power steering control valve. Allow fluid to drain into a container.

IMPORTANT: Identify location so that the hoses are installed in the correct location later. Also remember that the hoses enter the valve at a slight angle so that the ports will not be "cross-threaded" when the hoses are reinstalled.

- c) Disconnect the two remaining hydraulic hoses from the top of the valve.
- d) Remove the valve clamp cap screw at the relay rod.
- e) Remove pitman arm nut and separate pitman arm from tapered stud of valve. We strongly recommend the use of a "pickle fork" for this operation.
- f) Unscrew valve body from relay rod and discard.

## 2. INSTALLATION

- a) Install new control valve in reverse order of removal:

torque pitman arm nut to 45 ft-lbs

torque valve adapter clamp screw to 20 ft-lbs

valve is pre-greased at our factory - do not grease valve

- b) Fill system with new, good grade power steering fluid.
- c) Check for leaks and repair if needed.

## 3. ADJUSTING VALVE AND BLEEDING THE SYSTEM

- a) With power steering reservoir full, start engine momentarily and then shut off. Refill pump reservoir.
- b) Repeat previous step until pump reservoir level remains constant.

CAUTION: Keep arms away from steering wheel - wheel may start to turn by itself. If it does, valve centering is required. (Every vehicle is slightly different and it is not possible to exactly preset the valves at the factory.)

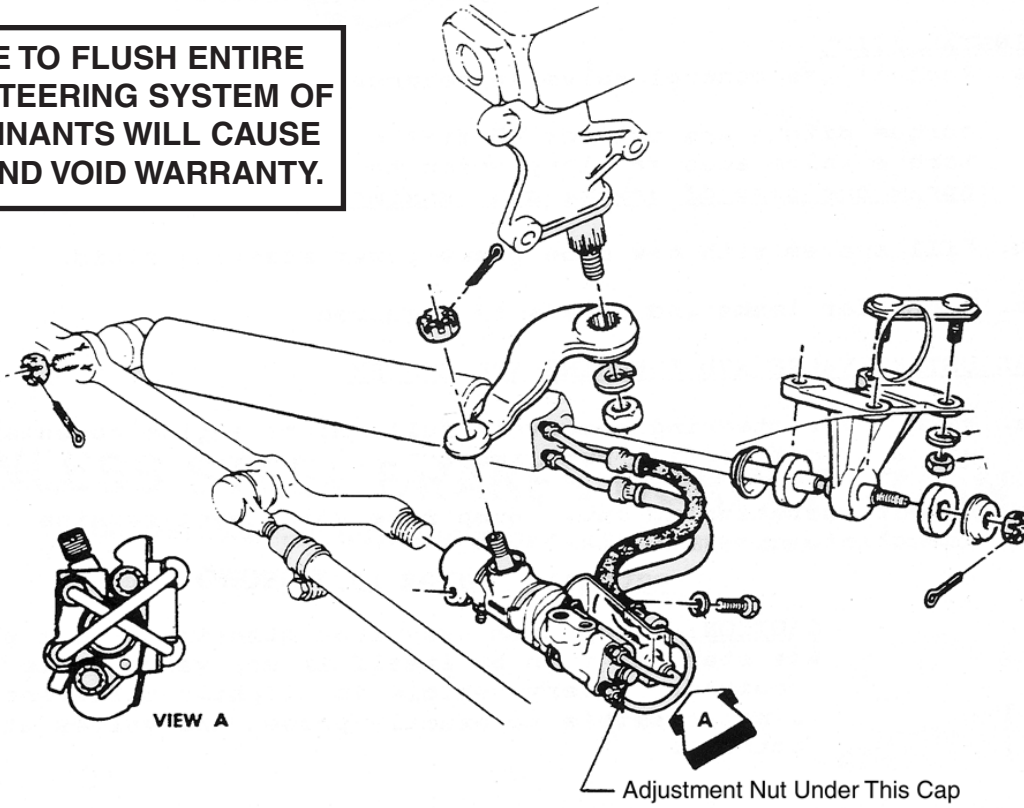
- c) To center the control valve, the piston rod of the slave cylinder must first be disconnected from the frame rail bracket. Then remove the dust cover marked "C" from the end of the control valve to gain access to the adjusting nut.

- d) Start the engine and observe the piston rod movement. If the rod **RETRACTS** when the engine is started, it will be necessary to turn the adjusting nut **CLOCKWISE**. If the rod **EXTENDS** when the engine is started, it will be necessary to turn the adjusting nut **COUNTER-CLOCKWISE**. Turn the adjusting nut until the piston rod begins to move in the opposite direction.
- e) Now turn the adjusting nut in the opposite direction of step (d), counting the turns until the piston rod begins to move back in the original direction it did when the engine was first started. Now turn the adjusting nut back in the opposite direction  $\frac{1}{2}$  the total number of turns you counted.
- f) If the control valve is properly centered, you should be able to manually push and pull the piston rod in and out of the slave cylinder by hand with the engine running.
- g) Turn off engine and reconnect the piston rod to the frame bracket.
- h) With the front wheels still off the ground, start the engine and observe the steering wheel. If the valve is centered, the wheel should not move when the engine is started. If the wheel does move, a further fine adjustment may be needed.
- i) When all adjustment is complete, be sure to re-install the metal dust cap.
- j) Turn steering wheel to a full left and then to a full right turn and hold momentarily; this bleeds the system.
- e) Refill reservoir if oil level has dropped.

#### 4. FINAL INSPECTION

- a) Check drive belts and readjust tension if required. Replace frayed or glazed belts at this time. (A high pitched noise at the extreme end of steering wheel travel indicates a slipping belt.)
- b) Make sure that the hydraulic hoses do not twist or interfere with adjoining hoses or adjacent chassis parts.

**FAILURE TO FLUSH ENTIRE  
POWER STEERING SYSTEM OF  
CONTAMINANTS WILL CAUSE  
LEAKS AND VOID WARRANTY.**



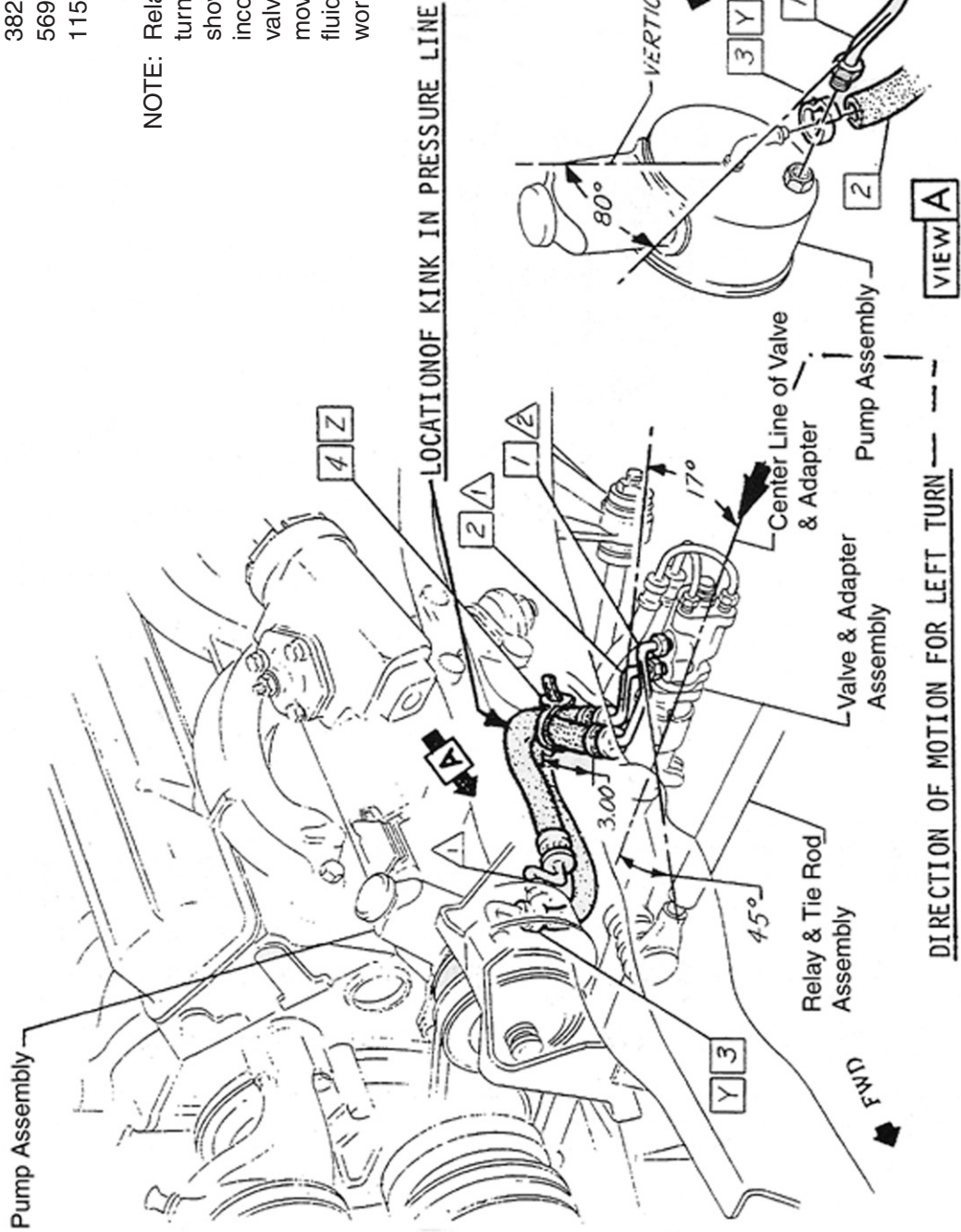
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3826277	1	Hose Asm-Inlet
3826278	2	Hose Asm-Outlet
5690839	3	Clamp
11501906	4	Strap

**NOTE:** Relay rod is shown in center position. Upon left turn, relay rod moves in direction of arrow shown. If pressure hose from pump to valve is incorrectly routed, it will kink and cut off flow to valve, thus hanging-up. Once steering is moved back from full left turning hose will allow fluid to flow again and system will appear to work correctly.

**Y** See UPC 9E Hydraulic Steering System Requirements for clamping instructions.

**Z** Position strap to dim. show back from crimping flange of inlet hose.



# Solutions Guide

to commonly asked questions.

## Why is my brake pedal soft?

1) In most cases, Air is trapped in the lines or calipers. Try re-bleeding the system. Do not force new fluid into new brake lines. It may foam and be very difficult to bleed. **Make sure that the bleeder screws on the calipers are facing upward!**

2) If all the air is out of the system, the pushrod from the booster may need adjustment, under the dash, to make it longer. Do not extend it too long or it will not allow the fluid to return, causing brakes to drag. Your pushrod may not be adjustable. If the pushrod can be made longer, try ¼ turn adjustments at a time. SSBC stocks adjustable pushrods for many vehicles. In addition, the pushrod between the Booster and the Master Cylinder may need adjustment. Not all Booster to Master pushrods are adjustable.

3) You may have a bad Master Cylinder. Before you determine this, you should make sure that all the air is out of the system. When installing a new Master Cylinder, always bench bleed first. If you did not, take off the Master Cylinder and bench bleed it. (See Bench Bleeding Instructions below)

## Why does the car pull to one side?

The side that the car is pulling to is the caliper that is working. Re-bleed the opposite side and try carefully stopping again.

## Why does it feel like there is no Power Assist?

The Booster may not be getting enough vacuum to operate. On some high lift cams, the engine does not develop enough vacuum. The Booster needs at least 16" of vacuum to operate correctly at idle. If you do not have at least 16 inches of vacuum at idle, you may have to add a vacuum pump to your system.

Check for vacuum leaks. There may be leaks in the intake manifold or hoses that would cause low vacuum. The Booster may be bad. Do a vacuum test. If the Booster can retain a vacuum for three (3) minutes after the vehicle is shut off, it is not a bad Booster (refer to steps 1 & 2). All Master Cylinders must be bench bled in a vise before being installed on the vehicle.

## How do you bench bleed a Master Cylinder?

Secure one of the ears in a vise so that you can take a large screwdriver and push the piston in. Fill the reservoir with clean fluid. Take a dummy line or our M/C bleeding kit and hook it up to the two ports. Front line to front and rear line to rear reservoirs. Slowly stroke the master and let it return slowly. You should see many air bubbles in the fluid. Repeat this step until you do not see any more air bubbles. SSBC recommends ten (10) slow pumping strokes after you see no more air bubbles. This will insure a good hard pedal. (See SSBC part #0460 Instruction Sheet)

## What is the best pad for my vehicle?

Your choice of pads should be determined by how and where you drive the vehicle. If you drive in heavy stop and go traffic you would need a different pad than someone who is road racing. Contact SSBC for the correct application.

## How often should brake fluid be changed? (street application only, not racing)

When brake fluid turns brown, it is time to change the fluid. The brown color indicates that the fluid has absorbed water and dirt. D.O.T. #3 & #4 fluids absorb water. Silicone brake fluid is not for track racing.

## How can I tell which reservoir is the front or rear of the Master Cylinder?

The front reservoir is usually larger than the rear. In some cases, they are the same size. As a rule, for GM cars & trucks, the rear reservoir is for the rear brakes. On Ford cars & trucks, the front reservoir is for the rear brakes. On front wheel drive vehicles, the brakes are split diagonally. Each bowl of the master cylinder services one front wheel and one rear wheel. This will be important if you are installing a distribution block, proportioning valve, or residual valve. Hint: The larger bowl will feed the disc brakes.

## Where is the best place to install a proportioning valve?

The best place to install a proportioning valve is after the distribution block. **Do Not install it between the Distribution Block and the Master Cylinder.** You will not be able to get a hard pedal. Anywhere after the Distribution Block and before the rear flex hose is acceptable for installation.

## Why should the flex hoses be replaced? They look O.K. from the outside.

Flex hoses should be replaced every time the calipers are serviced. They flex up and down, just like a shock absorber. They are also under high pressure internally. Flex hoses have a rubber liner that will collapse over time. If it does collapse, it will act as a check valve and not allow fluid to return to the Master Cylinder.

## Will my pedal get harder by replacing the flex hoses?

No. When the flex hoses are replaced, re-bleed the brake system. Normally what happens is that bleeding causes a harder brake pedal. A better bleeding job and taking your time will result in the same situation.

## Are the rubber flex hoses expanding causing a soft pedal?

Not likely. A soft pedal is usually a sign of air in the system due to poor bleeding. Flex hoses have nylon webbing that is molded into the internal rubber. It is very strong and will hold up to 3,000 P.S.I. Installing braided stainless steel hoses is not necessary; it only improves appearance.

## How much brake pressure does it take to stop my vehicle?

Most vehicles, power or non power brake, develop 1,200 P.S.I. When you panic stop or jump on the brakes hard, a surge of 1,400 P.S.I. can be achieved. If a factory proportioning valve installed on the vehicle, the rear brakes are only developing 600 – 700 P.S.I. Drum brakes require lower pressure because they grab more quickly. When rear disc brakes are installed, the rear brake pressure may be increased to 8000 – 1,000 P.S.I. or more. A good way to check the pressures and to see if the system is working correctly, use a pressure gauge screwed into the bleeder port (SSBC part # A1704). A vehicle with less than 600 P.S.I will not stop!

## How tight should the wheel bearings be?

The front bearings should always be torqued. Not just hand tightened. Bearings usually require 12-15 Ft./Lbs. of torque. Then you will probably need to back off a little to align the cotter pin hole. Do Not over tighten; the bearing life will be shortened. This procedure only applies to rear wheel drive vehicles with separate bearings and races. On vehicles with one piece sealed bearing assemblies or hub assemblies, refer to a service manual.

## What type of differential fluid should I use in my rear axle?

If you have positraction, use a Hypoid or Limited Slip additive that is designed for your particular rear end. If you do not have positraction, any type of 80 –90 weight gear lube is acceptable. Fluid should be changed often if you are trailering or any type of extreme usage. This fluid does brake down with time and usage.

# Replacement Pads for ***FORGED*** Kits

## Caliper

Sport 66 Single-Piston Caliper  
Super 80 Single-Piston Caliper  
SuperTwin 2-Piston Caliper  
Classic 4-Piston Caliper  
Extreme 4-Piston Caliper  
Extreme + 4-Piston Caliper

## FMSI Part #

D-154  
D-52  
D-52  
D-11  
D-531  
D-531

## SSBC Part #

10113  
1015-2  
A1015-3  
10110  
10109  
10109

## Replacement Pads for non-**FORGED** Kits

<u>Kit #</u>	<u>FMSI Part #</u>	<u>SSBC Part #</u>
A110	D-204	1049
A110-1	D-347	1047
A111	D-204	1049
A111-2, A111-3	D-347	1047
A112, A112-1, A112-2, A112-4	D-347	1047
A118	D-204	1049
A120, A120D, A120P, A120-2, A121, A121P	D-11	A1033
A123, A123-1, A123-3, A123-4	D-52	1050
A125, A125-1, A125-2, A125-3, A125-4, A125-5, A125-6	D-347	1047
A126, A126-3, A126-4	D-413	1070P
A126-1, A126-2, A126-5	D347	1047
A127	D-347	1047
A128, A128-1, A128-2, A128-4	D-347	1047
A128-3, A128-5	D-204	1049
A129, A129-1, A129-3, A129-4	D-52	1050
A130, A130-1, A130-2	D-347	1047
A132, A132-1, A133, A133-1, A134, A134-1	D-34	1046
A135*	D-368	10100
A135-1	D-369	1094
A136, A136-1	D-347	1047
A137	D-8	1012
A137-1, A137-3	D-52	1050
A140, A141, A143, A144, A145, A146	D-154	1084-2
A148, A148-1	D-154	1084-2
A153, A153-1, A153-2, A153-3, A154, A154-1, A154-2	D-11	A1033
A154, A154-1, A154-2, A154-3	D-11	A1033
A155, A155-1	D-347	1047
A156, A156-1, A156-2, A156-3	D-11	A1033
A158, A158-1	D-347	1047



**Stainless Steel Brakes Corporation**

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 ssbrakes.com • tech@ssbrakes.com

**REPLACEMENT  
PARTS  
ORDER FORM**

**DATE:** \_\_\_\_\_

**CUSTOMER # (from receipt):** \_\_\_\_\_

**ORDERED BY:**  
**NAME:** \_\_\_\_\_  
**COMPANY:** \_\_\_\_\_  
**STREET:** \_\_\_\_\_  
**CITY:** \_\_\_\_\_ **ST:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_  
**DAY PHONE:** \_\_\_\_\_  
**FAX:** \_\_\_\_\_  
**E-MAIL:** \_\_\_\_\_

**SHIP TO:**  
**NAME:** \_\_\_\_\_  
**COMPANY:** \_\_\_\_\_  
**STREET:** \_\_\_\_\_  
**CITY:** \_\_\_\_\_ **ST:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_  
**DAY PHONE:** \_\_\_\_\_  
**FAX:** \_\_\_\_\_  
**E-MAIL:** \_\_\_\_\_

**VEHICLE INFORMATION:**  
**TYPE OF AUTOMOBILE:** \_\_\_\_\_  
**YEAR** \_\_\_\_\_ **ENGINE:**  4 CYL.  6 CYL.  8 CYL.

**TYPE OF DRIVING:**  
 STREET  RACING  
 STREET & SLALOM  STREET MODIFIED

**ORDER INFORMATION:**

QUANTITY	PART #	DESCRIPTION	UNIT PRICE	AMOUNT

**METHOD OF PAYMENT:**

CHECK/MONEY ORDER  VISA  MASTERCARD  DISCOVER  AMEX

**CREDIT CARD #:** \_\_\_\_\_ **EXP:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

Total Merchandise	
NY Residents Sales Tax	
Ins. (add \$0.35 per \$100.00)	
UPS Shipping (please call)	
<b>TOTAL</b>	

*Price subject to change without notice. Not responsible for typographical errors.*

*NOTE: Name, address & telephone number must be printed on checks. Driver's License number required for personal checks.*

**FREE FREIGHT**  
 IF ORDERED WITHIN 30 DAYS OF INITIAL ORDER  
**MAIL OR FAX YOUR ORDER!**

# TECHNICAL SUPPORT / WARRANTY POLICY

You have just purchased a high quality product manufactured by Stainless Steel Brakes Corporation. To ensure proper installation, please read all instructions thoroughly before beginning your work. In most applications, your kit will install as the instructions indicate. From time to time, the original equipment on some vehicles may have slight variations that can effect the ease of installation. Minor modifications during installation may be necessary to successfully install your kit. If modifications are necessary, please refer to a licensed mechanic and/or contact our technicians for modification approval.

Installation of braking, steering and suspension components and systems require proper procedures and methods to assure safe and correct operations.

Always test completed installations in a safe area. For proper operation, and if questionable, correct prior to placing the vehicle in service.

Our company maintains experienced technical service personnel, including a licensed professional engineer who have the knowledge and background to help you with installation or operating problems. Our technicians may be reached by telephone at 716-759-8666, Monday - Friday, 9:30 AM - 5:30PM EST. If unavailable, please leave a brief message, including your day phone number, and they will return your call as soon as possible. You can also e-mail us at [tech@ssbrakes.com](mailto:tech@ssbrakes.com). If you prefer, we will be pleased to speak with your installing mechanic.

If it becomes necessary to return an item for any reason, a Return Goods Authorization (RGA) Number must first be obtained by telephone. A simple written description of the reason for the return should be included with the part. Your name and phone number should also be included. (Use the attached form.) "Defective" is not enough of a description. See following page for detailed instructions.

We urge you not to disassemble or alter any part supplied, nor purchase additional parts or services in order to facilitate installation. Lack of prior approval by our company will constitute a violation of our warranty with consequent denial of reimbursement for parts - faulty or not.

Before contracting outside professional assistance, please be aware that we do not reimburse for labor charges under any circumstance. Consult our standard warranty card provided with your order.

## **NEED TO RETURN A PART? FOLLOW THESE INSTRUCTIONS.**

- > Did you call our Technical Assistance (716-759-8666) before you decided to make a return? If not, you should do so now.
- > You must have a Return Goods Authorization Number (RGA) issued to you prior to returning any item. If you return without an RGA #, you run the risk of not receiving credit.
- > Make sure to include the completed Return Form with invoice and RGA # with your parts.
- > Whenever possible, please return item in original box with invoice and RGA # clearly marked on the outside of the box.
- > Any return must be shipped postage paid - NO collect shipments will be accepted.

It is a good idea to insure the returned part(s) for the full value to protect yourself against loss. We strongly suggest you ship by UPS or U.S. Mail, no BUS or AIR shipments will be accepted. All foreign returns must have authorization.

**NOTE:** Under no circumstance should any product(s) or part(s) be returned without prior authorization number (RGA #). Any part which, in our opinion, shows evidence of being used, installed contrary to SSBC instruction, defaced, subjected to improper handling, packaging or shipping by the customer will not be eligible for exchange, refund or warranty consideration.

# RETURN FORM

Name: \_\_\_\_\_

Invoice #: \_\_\_\_\_

Address: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

\_\_\_\_\_

Purchased From: \_\_\_\_\_

Phone: \_\_\_\_\_

List item(s) and a detailed explanation of why you are returning the item(s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RGA #** \_\_\_\_\_



Use this label for your package.

From: _____ _____ _____	
TO: Stainless Steel Brakes Corp. 11470 Main Road Clarence, NY 14031	
RGA #: _____	Invoice #: _____