



## **PRO-LITE BILLET TRANS BRAKE INSTALLATION GUIDE**

### **Forward Shift Pattern P-R-N-2-1**

**Pro start Drag Racing is without saying the toughest form of racing for both man and machine. That is why we at TRANSMISSION SPECIALTIES Research and Development have developed our most effective product in years. The PRO- LITE Transmission Brake for the Powerglide Transmission. Extensive testing on our in house valve body testing machine, measures valve body line pressure and release time to insure that every valve body produced meets all of our exacting performance requirements. Guaranteeing you the best products available today.**

It is with great pleasure that we at TRANSMISSION SPECIALTIES assure you that you have purchased the best product available today. If you should need any kind of technical help or assistance, please feel free to call us toll free at any time. Below is a step-by-step installation guide and tip sheet. Follow these directions carefully. If you don't understand something, please call and ask. 95% of all of our warranty problems are due to mistakes made during installation. Please help us to help you.

Enclosed in your package should be the following parts. Please check to make sure that you have everything you need.

- 1- Powerglide Pro Lite Valve Body
- 1- Electric Solenoid
- 1- Set of Reverse Clutch return springs
- 1- Special Trans Brake Valve

If you are installing this product into a racing transmission that is already finished, we recommend that you secure the services of an experienced transmission rebuilder in your local area. If you are installing this product yourself, and you are not experienced with working with powerglides, please get yourself some kind of factory repair manual such as a Chilton Manual to assist you with transmission assembly.

This guide is written to assist you in the installation of this product. It is not intended to be a transmission-rebuilding guide. If you are interested in knowing more about how to build a racing Powerglide please consult our Tech Department.

NOTE: Steps 1 thru 3 do not have to be performed to make this product work. However proceeding with these steps will greatly enhance the performance of this product.

**STEP 1.** Completely disassemble the transmission down to the case only. At this time perform the drilling sequence shown in photo 2.

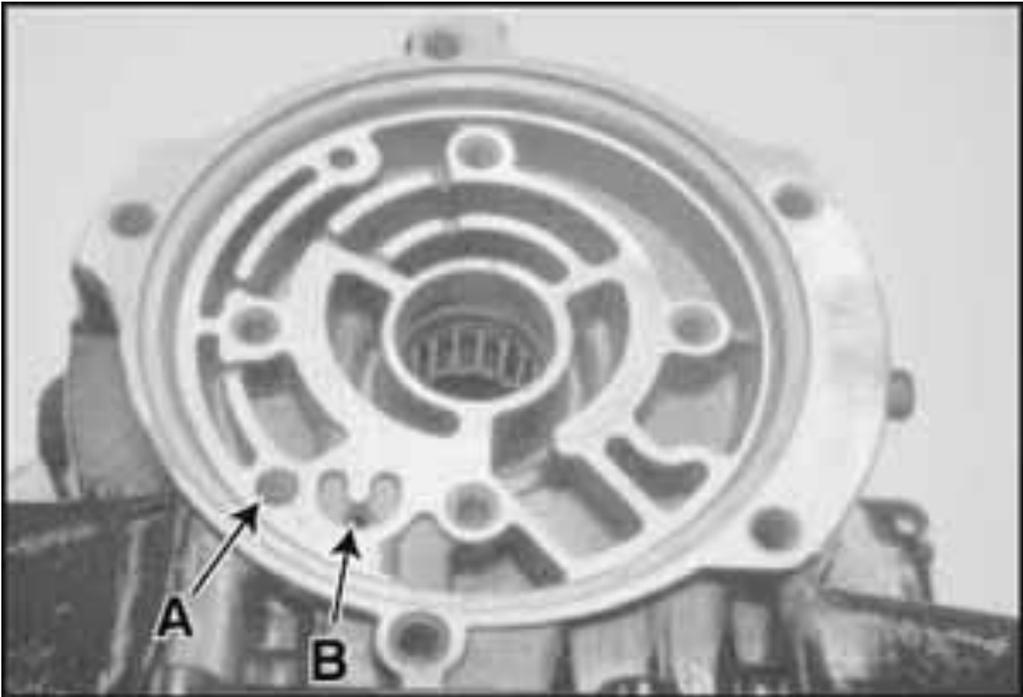
-Enlarge hole "A" using a 5/16" drill. Drill through back of case, smooth and deburr both ends of hole. **(Photo 2)**.

-Area marked "B" will be the place to drill a new hole. **(See Photo 2)** You will drill a 5/16" hole into the reverse piston area. Deburr both ends of hole. **NOTE:** When holes "A" and "B" are drilled properly, you can see all the way through the case.

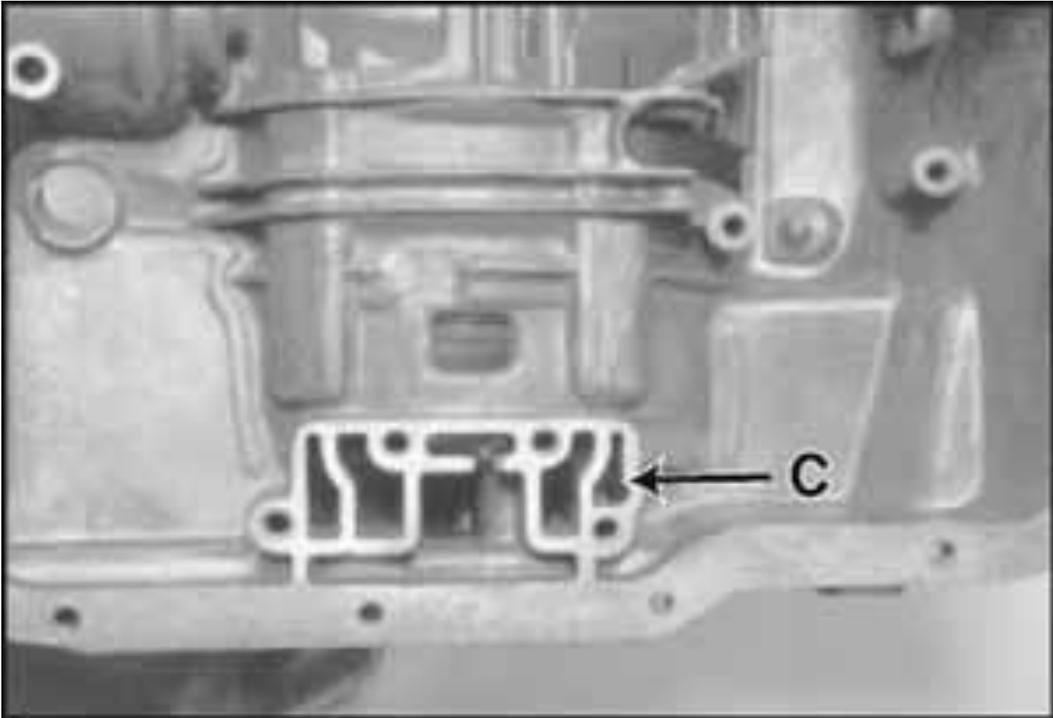
-Enlarge "C" to 5/16". This hole will intersect with hole "A" that was drilled in **STEP 2.** (See Photo 3)

**\*\*NOTE\*\***

**After you have drilled the case, make sure that you clean the entire case completely to make sure that you have removed every little chip of aluminum caused by the drilling procedure. One little chip is all it takes to stick the pressure regulator valve and turn the entire transmission into a pile of junk.**



**PHOTO 2**



**PHOTO 3**

- STEP 2.** Replace the reverse clutch piston, and install the springs furnished in the kit. Discard the original reverse clutch springs.
- STEP 3.** Remove the wavy steel spacer if your transmission has one. Reinstall the reverse clutch pack. Try to get at least 5 friction plates into your reverse clutch pack. Check the clearance of the clutch assembly and make sure that it reads from .050 to .075 if possible.
- STEP 4.** Before installing the valve body, dip the special valve enclosed in some transmission fluid. Then install it into the valve body. There is no spring that goes with this valve so just push it into the valve body as far as you can, and proceed with the next step. If you don't install the valve now, you will not get it into the valve body after it has been installed onto the transmission.
- STEP 5.** Replace the valve body with the one enclosed, making sure that you reinstall the low servo feed tube. After the valve body is secure, make sure that you do not over tighten it to the case. Check the manual valve to make sure it is properly engaged into the shifter linkage before installing the linkage guide plate.
- STEP 6.** Install the filter and pan.
- STEP 7.** Adjust Band: To adjust the low band, release lock nut around the adjustment lug on the side of the case. Tighten the adjustment lug until it is snug using a short wrench. Then back out lug 3 ½ turns, and retighten lock nut.
- STEP 8.** Install the Electric Solenoid enclosed where the vacuum modulator was. Make sure that you use a little spot of lock tight on the thread. These solenoids are a little heavier than the original modulator, which gives them a tendency to want to loosen up. Be careful not to tighten it up too much either, because the threads in the case are not that strong and also have a tendency to strip out or crack the case along where the thread boss is located. Please be careful.
- STEP 9.** To function properly, the electric Solenoid needs to be connected to the 12- volt supply using the best wiring procedures. Wiring is easy but for the best results please follow these suggestions. Attach the black wire to a good ground. The transmission case is NOT a good ground. Try to use a 12 to 14-gauge wire to attach the ground. NOTE: The electric supply to the trans brake button should come from your fuse panel in your car. Please, for safety reasons, use a 20-amp fuse in the line. Do Not run the brake button off the same line as the line lock. Use an independent fused source only for your transmission brake.  
If you are using a disconnect on your wires, make sure to solder all of your connections. Terminals that are not soldered are just not good enough. For this solenoid to function properly, it must be installed properly.

# **\*\*Important Information to preserve the life of your transbrake\*\***

## **Reverse**

**\*In order to use reverse, you must hold down the transbrake button while shifter is in the reverse position.** This is how all Pro Brakes operate. Holding the t/b button down allows for the necessary increase in reverse line pressure. This ensures a properly functioning reverse gear. No exceptions.

## **Adjusting your Shifter cable**

This is a crucial part of installing your new V/B. Failure to follow these steps WILL result in premature clutch wear and/or ultimately the demise of the trans. Failure to follow this procedure will void any implied warranties.

With the shifter installed in the car, place the selector in the neutral position. Now place the detent lever into the neutral position on the transmission. Attach the cable to the shifter and the detent lever and adjust accordingly so they line up. Have someone inside the car place the shifter into the lowest gear. Underneath the car, remove the shift cable from the detent lever and make sure that the cable slides in and out of the lever as smooth as possible. There can be no movement from the lever when you are removing and attaching the cable. If there is movement, then you must adjust the cable accordingly so that you get the correct fit. After you feel comfortable the adjustment is perfect, attach the cable and move to the next forward gear. Repeat this step for each forward gear that your transmission has. After that, you can adjust Neutral, Reverse and Park.

## **Solenoid Wiring**

Please use professional soldering techniques and heat shrink on all connections. Loose connections anywhere **will** cause transbrake malfunction. Wiring to solenoid should be 14-gauge wire. Use a switch that you are comfortable with and that has min 20-amp 14-volt DC capacity. Install a 10-15-amp fuse in powerline to switch or use fusible link of sufficient capacity and solenoid.

## Note

Hooking a solenoid up to a toggle switch or any constant hot source like reverse lights leads to more solenoid failures than anything else. There is a very high probability that it will be left on. If you are running into an electronics box such as a delay, grid or other type please be careful and check with the manufacturer of the product for safe and proper installation of the solenoid. Solenoids and electronics are rarely, if ever, warranted due to the fact that it's almost ALWAYS a installation error that causes the failure. Every solenoid is checked and fully operational before they leave our facility.

## Filling the Transmission

### **What You Should Know About A.T.F.**

When filling the transmission with A.T. F., keep in mind these little known facts listed below. I'm sure that you will find this section informative and helpful.

While checking the fluid level of the transmission, keep in mind that the level will change directly with the fluid temperature. If the fluid feels cool, about room temperature, the level should be between the two dimples below the "add" mark. Dimples are on only some models.

If the fluid feels warm, the level should be close to the add mark.

If the fluid is hot, the level should be between the add and full marks. If fluid is added, recheck the fluid level after one to three minutes with the engine running.

Hydra-matic engineers note that automatic transmissions are frequently overfilled because the fluid level was checked when the fluid was cold and the dip stick indicated that fluid should be added.

As the fluid temperature increases, a level change of over  $\frac{3}{4}$ " will occur as fluid temperature rises from 60 to 180 degrees. Refer to figure C.

## Transmission Fluid Tips

It really doesn't matter to me what type of fluid you put in the transmission [TYPE-F or DEXRON II] as long as it is a high quality brand. My personal preference in my race cars was KENDALL TYPE-F. It seemed to hold up the best for me. The basic difference is the DEXRON II has a little bit more of the lubricity additive. This will cause a little softer shift than TYPE-F.

## Color

A few years ago, transmission fluid becoming dark, indicated fluid failure. Hydra-matic engineers say this isn't true today. DEXRON II turns dark early in its life; therefore, the color of the transmission fluid is not a good indicator anymore.

## Smell

Hydra-matic engineers say that smell isn't always the best indicator of the fluid anymore, either. After a few hundred miles, DEXRON II develops a definite odor. Engineers say the transmission fluid should not be replaced prematurely just on the basis of its smell. Although sight and smell alone should not be used to determine the condition of the fluid, do not overlook these symptoms when making a service determination.

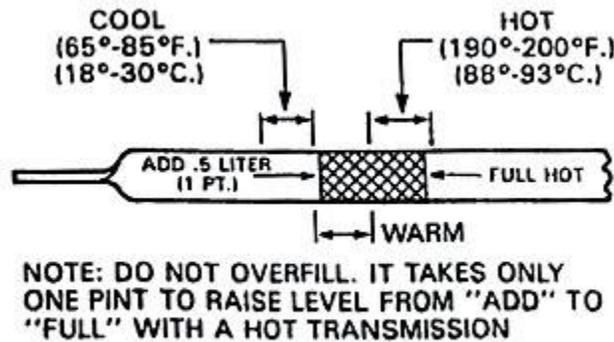


Figure C

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## WARRANTY

Transmission Specialties products carry a 90 day minimum guarantee against defects in material and workmanship. This warranty is implied on only products produced and manufactured in house by Transmission Specialties, Inc. Transmission Specialties, Inc. Will not warranty any failure of parts manufactured by the OEM Manufacturers.