

**W140N10145 Fond Du Lac Ave.  
Germantown, WI 53022  
Phone: (262) 251-7777  
Email: info@autotransdesign.com  
www.AutoTransDesign.com**

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## **HIPSTER'S BILLET ALUMINUM POWERGLIDE TRANSBRAKE (P/N: 12748B)**

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### CAUTION

*Please read all of these instructions in their entirety before proceeding with installation.*

*This or any transbrake should only be installed by a qualified race transmission technician. If you are unfamiliar with any of the operations or terms, take your transmission to a qualified race transmission shop. Improper installation may cause property damage, personal injury and/or death.*

Your 12748B billet transbrake kit includes the following parts:

- (1) Hipster's Billet Powerglide Transbrake Valve body w/ Manual Valve, Brake Valve & Spring,
- (1) Hipster's Billet Powerglide Filter Extension (12748BXT),
- (1) Hipster's Powerglide Transbrake Solenoid,
- (1) Dacron Filter (Replacement P/Ns: Filtran 805973/12010C/F-104) ,
- (1) Hardware Kit (1 Pressure Regulator Adjustment Hex Tool, 2 Bolts, 1 Socket Head Shoulder Screw, 3 Filter Screws, 4 Washers),
- Instructions & Decals.

### **SHIFT PATTERN**

This transbrake employs forward shift pattern: **Park - Safety Reverse - Neutral - 2 - 1.**

### **SAFETY REVERSE**

The transbrake button must be depressed to engage reverse. This also allows the driver to safely neutral the car in the traps.

### **SOLENOID WIRING**

Wiring to solenoid should be 12-14 gauge. Use a switch that you are comfortable with and that has 20 A, 12 VDC capacity. Install a 10-15A fuse in power line to switch, or use fusible link of sufficient capacity at solenoid.

Solenoid draw: 8 amps.

### **WARRANTY**

This product is warranted for 12 months from date of purchase against defects in material and workmanship. During this period such defects will be repaired or replaced at manufacturer's option. Return any defective products to your supplier. This warranty does not cover damage caused by misuse, alteration, or negligence. All implied warranties, including but not limited to implied warranties of fitness and merchantability are limited in duration. Under no circumstances will manufacturer be responsible for special, incidental, or consequential damages or costs arising from or in conjunction with the installation or use of any product of the manufacturer. Automatic Transmission Design, Inc. parts are sold "as is" and acceptance of delivery of said parts manufactured by Automatic Transmission Design, Inc. hereby release said Automatic Transmission Design, Inc. of all liability of any type whatsoever from accidents and/or injuries. Our products are sold as finished products and proper installation and operation are purchaser's sole responsibility and Automatic Transmission Design, Inc. assumes no responsibility for the installation of said products.

# INSTALLATION INSTRUCTIONS FOR HIPSTER'S BILLET POWERGLIDE TRANSBRAKE

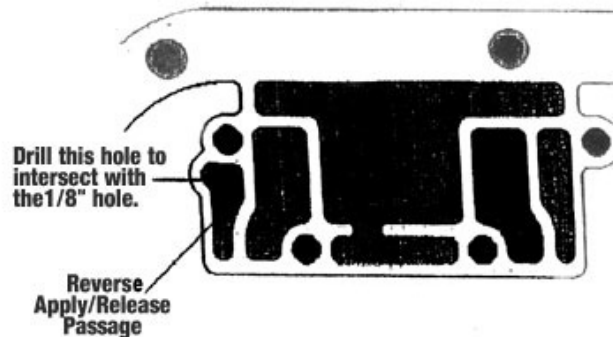
1. Carefully remove the existing valve body; **do not damage the low servo apply tube.**
2. Modify the transmission case and set the clearances; see below.

## TRANSMISSION MODIFICATION INSTRUCTIONS

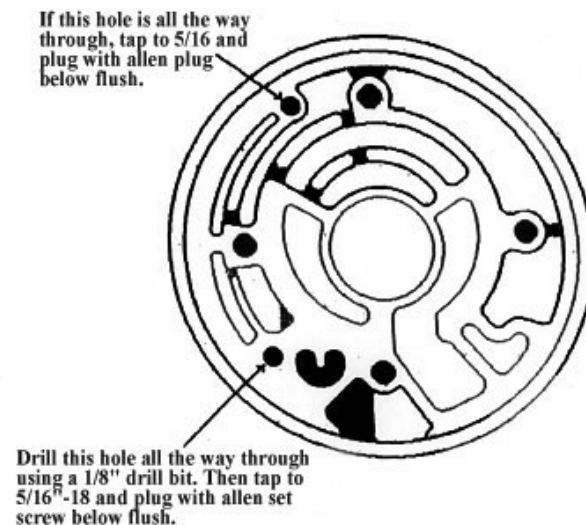
When using this valve body on a transmission already set up for transbrake use, we have found a slight improvement in reaction time by increasing the reverse apply/release case passage to 3/8 inch for suspended chassis cars. Dragsters and unsuspended altered should only need a 5/16 inch hole.

## HOW TO DRILL THE STOCK CASE

**Do not modify any aftermarket cases (Reid, JW, etc.). Reverse piston must be removed from case before drilling!** With the transmission disassembled, locate the reverse apply/release passage in the case. Refer to the figure below. Using a 5/16 inch or 3/8 inch drill bit, drill from the valve body side of the case up to the intersection of the hole in back of the reverse piston area. Then locate the 1/8" hole from the piston side of the case, using the same bit drill to enlarge the hole until you intersect the drilled passage from the bottom. Do not drill through the back of the case or you will ruin the transmission case.



If you have an early model case (rear pump style) with the hole at the top of the piston area, follow these case modification details. Refer to the figure below. If the hole at the top of the case is drilled through the case, tap the hole 5/16-18 and install set screw below flush. Refer to the bottom of the figure below. Drill the additional lower hole all the way through using a 1/8" drill bit to create a pilot hole. Tap and plug hole with 5/16-18 set screw below flush.



## REVERSE CLUTCH CLEARANCE

To ensure quick set-up and release, clearance reverse clutches between .050”-.065”. Use of five clutches works best for most applications. **Only use stock reverse springs.**

3. The use of a new style double ring servo is strongly recommended. We prefer the Sonnax Supported Servo Kit. **Do not use a kevlar band.** Relined race bands with red linings are best. Servo kits and red bands are available for direct purchase from ATD.
4. For optimal performance, pump gear to pocket clearance should not exceed 0.0015”.
5. Pump stator converter feed hole size is important. Use a pump stator with 3/16” or larger converter feed hole, and inspect cooler feed sizing. Early stator bodies have cast-in restrictors that can be easily seen upon inspection. If there is no restrictor, cooler feed must be restricted to .110”. This can be achieved by tapping the cooler feed hole in the stator and installing a 5/16” set screw with a .110” hole drilled in it (7/64 or #35). See addendum for pump identification. *DO NOT MODIFY AFTERMARKET PUMPS.*
6. Be sure mating surfaces of the transmission case are perfectly flat, as this valve body uses no gaskets. Flat file or stone the case to eliminate high spots.
7. Install your detent lever on the provided socket head shoulder screw, and attach to the side of the new billet valve body.
8. Install your low servo tube into the new billet valve body.
9. Install the valve body into the case using OE valve body to case bolts (or equivalent) and supplied flat washers. Replace the short OE valve body bolt at top center with one of the supplied 5/16-18 x 1.5 bolts. Do not install a washer at guide plate location or at raised bosses adjacent to PR bore. Torque the valve body to case bolts to 15 ft/lbs.  
*Note for aftermarket cases:* Ensure that the valve body clears the reverse feed passage area. Minor case grinding may be necessary.
10. Install the manual shift valve guide plate, ensuring the valve to shift lever engagement. Install the detent spring tab with one of the supplied 5/16-18 x 1.5 bolts, and install the spring.
11. Install the brake valve and solenoid.
12. Install filter and pan. *Do not over tighten filter screws - 20 in/lbs MAX.* Torque pan bolts to 10 ft/lbs.
13. Fill the trans with fluid and raise the car on jack stands.
14. Run the trans through all gear ranges. Test the transbrake operation a few times. To engage reverse, put shifter in reverse and press the brake button.
15. Smoke the competition.

## NOTES

Replacement filters are available from ATD or most parts suppliers. Replacement P/Ns: Filtran 805973/12010C/F-104.

## PRESSURE ADJUSTMENT

Line pressure changes are achieved by adjusting the pressure regulator set screw. Your billet brake will be pre-set at approximately 210 psi. To adjust the pressure, follow these steps carefully:

1. Using the provided 1/2” hex tool and a wrench, loosen the outer most jam screw in the pressure regulator bore approximately one turn until both screws can be turned simultaneously.
2. Note the current position of the inside adjuster screw.
3. Turn the inside adjuster screw (with 1/2” hex tool) in/clockwise to increase pressure, out/counterclockwise to decrease pressure. One full turn changes the pressure approximately 30 psi.  
The pre-set line pressure is recommended for most applications. Do not increase pressure unless you experience holding problems. 240 psi is recommended for applications over 1,000 HP. The maximum achievable line pressure is limited to 275 psi. *Do not over tighten the adjuster screw.*
4. After making your pressure adjustment, carefully retighten the outer jam screw by snugging it up against the inner screw.

## BAND ADJUSTMENT

Tighten band screw to 72 in/lbs, back off 3 ½ turns, and then tighten the jam nut while still holding the screw.

## TROUBLESHOOTING

Install a pressure gauge in the low servo cover. With trans in low gear at 2000 RPM you should have 190-210 psi. Depress the brake button. Pressure should instantly drop to about 50 psi and then instantly return to within 5 % of the original reading.

**FOR TECHNICAL HELP CALL: (262) 251-7777, Monday-Friday 9am - 5pm CST.**

**IF YOU PURCHASED YOUR TRANSBRAKE FROM A RETAILER (e.g. JEGS) OR DISTRIBUTOR, DO NOT RETURN THIS PRODUCT TO THEM. PLEASE CONTACT US FIRST TO RESOLVE ANY ISSUES.**

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## BILLET VALVE BODY PRESSURE REGULATOR SUPPLEMENT

The adjustable pressure regulator assembly for Hipster's Billet Brake has been carefully adjusted to approximately 210 PSI prior to shipping. This adjustment is performed using a hydraulic fluid dyno. It is NOT a measured adjustment from the end of the valve body. To make any changes REQUIRES a pressure gauge.

If you run any debris through the transmission that contaminates the valve body, cleaning is performed by removing the brake valve, manual valve, and pressure regulator assembly from the valve body. Remove the pressure regulator by removing the PR adjustment jam nut and adjuster screw, and carefully sliding the spring and valve out of the bore. Handle the pressure regulator with care - scored valves will ruin the bore finish. *Separating the valve body is not required.* Solvent flush the oil delivery holes, manual valve bore, brake valve bore, and pressure regulator bore areas of the valve body to remove the debris and allow the solvent to drain. Reinstall the pressure regulator by applying a small amount of ATF to the valve, and carefully sliding the spring and valve into the bore simultaneously. *Do not use excessive force with the valve.* Reset the pressure adjustment by installing the adjustment screw and tightening it until it stops - *do not overtighten.* Back the screw off two full turns for factory pressure. Reinstall the jam screw.

Repeated disassembly of the pressure regulator and/or valve body will cause premature failure of the threads. *Do not use any other pressure regulator spring with this valve body!*

**REMEMBER** - When the valves and regulator assembly are removed from the valve body it becomes nothing more than a hydraulic manifold, making disassembly unnecessary.

