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HIPSTER'S BILLET TURBO 350 1+2 TRANSBRAKE (P/N: 32748-1A)

CAUTION

Please read all of these instructions 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 and/or death.

Your 32748-1A transbrake kit includes the following parts:

- (1) Hipster's Billet Turbo 350 1+2 Transbrake Valve body w/ Manual Valve
- (1) Separator Plate
- (1) Hipster's Turbo Transbrake Solenoid
- Spring/Parts Kit: (17) Heavy Duty Drum Springs, (1) Brake Valve Return Spring, (1) 1/2" Torlon Checkball, (1) Steel Servo Plug, (1) 3/8" Set Screw
- Hardware Kit: (4) Low Profile 5/16-18 SHCS, (2) 5/16-18 x 2 Bolts, (19) 5/16-18 x 1.5 Bolts, (1) PR Adjustment Hex Tool
- (1) Hipster's Billet Filter Extension (12748BXT) w/ Filter Screws
- (1) Small Dacron Filter (Replacement P/Ns: Filtran 804449/A12010A/F-103)
- Instructions & Decals



SOLENOID WIRING

Wiring to the solenoid should be 12 or 14 gauge wire. Use a switch that you are comfortable with and that has 20 amp 12 volt DC capacity. Install a 10-15 amp fuse in the power line to switch, or use a fusible link of sufficient capacity at solenoid. Solenoid draw is 8 to 10 amps. One wire to a known good ground, one wire to a switched 12 volt source.

SHIFT PATTERN

This transbrake employs a reverse shift pattern: **Park - Reverse - Neutral - 1 - 2 - 3.**

Do not neutral this or any three speed transmission at speed or the transmission may explode!

TO ENGAGE REVERSE

Put shifter in reverse or neutral position, and push the transbrake button. There is no line pressure drop - solid reverse. *There is no standard reverse function with this valve body - you must engage the transbrake to back up.*

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. Do NOT return any defective products to your supplier; contact ATD directly. 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.

INSTALLATION INSTRUCTIONS FOR HIPSTER'S BILLET TURBO 350 1+2 TRANSBRAKE

1. Disassemble the transmission.
2. Disassemble the direct drum to drill a bleed hole in the direct clutch apply piston.
3. Drill 1/16" hole at a 45 degree angle just inside the lip seal groove as shown below.



4. Replace the direct clutch apply piston lip seals, and discard the center seal in drum.
Be sure to install both seals on the piston, and none in the drum.
5. Install the apply piston in direct drum using the 17 new included heavy return springs, and install new clutches. Set clutch clearance at .045-.055".
6. Install new clutches in the low/reverse clutch pack. You should have five clutches in this pack. A recommended option is to use 700R4 clutches with an extra steel on top.
7. Omit the intermediate brake band and intermediate band servo assembly.
8. Tap and plug the governor feed bore with the 3/8-16 set screw provided, as shown below.
Only this governor passage is required to be plugged, but it is acceptable if both are plugged.



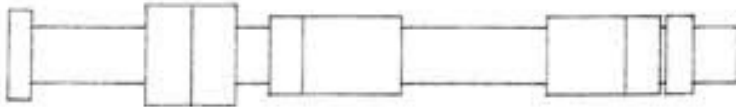
9. Reassemble transmission, retaining intermediate wave steel to help protect the intermediate sprag.
Install 1-2 accumulator assembly with both rings, spring, and o-ring on the cover, as per stock.

10. Install the intermediate band servo plug into the case bore as shown below. The plug must sit below flush and seal symmetrically around the case bore.

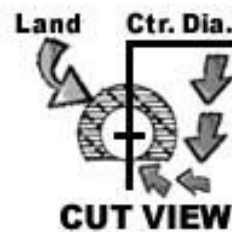
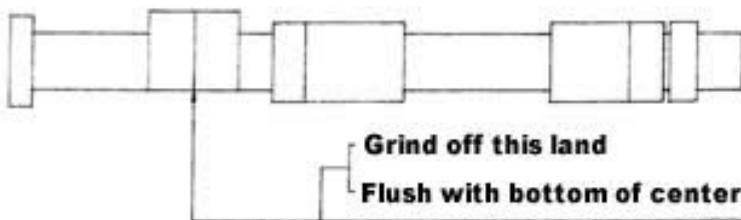


11. Flat file or wet stone the entire channel passage area of case - *absolutely no high spots or burrs allowed*.
12. Grind a stock modulator valve into a brake valve as shown below.

350 BRAKE VALVE (NORMAL)



350 BRAKE VALVE (MODIFIED)



350 BRAKE VIEW A

13. Reinstall the modified modulator valve into the case, then the solenoid *with a new o-ring*.
Check brake valve phasing as shown below!

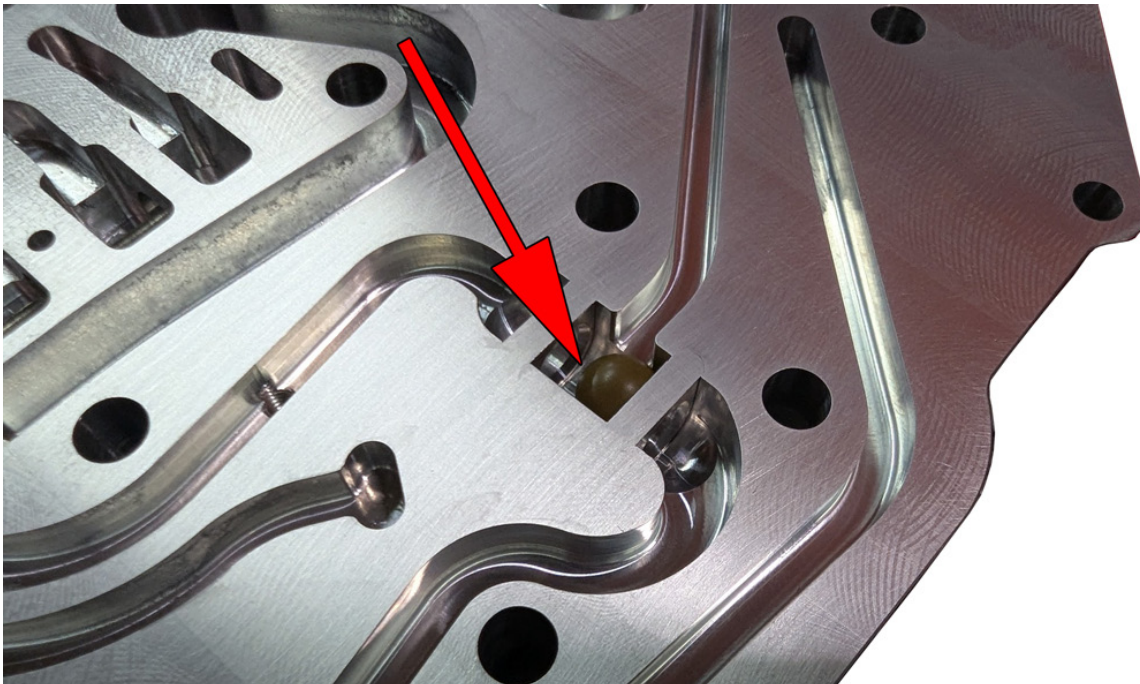


Brake ON: Lands 3 & 4 are connected.

Brake OFF: Lands 4 & 5 are connected.

You must verify that the solenoid plunger bottoms fully before the supplied brake valve return spring coil binds. This is only a problem on a few cases. If needed, trim 1-2 coils from the spring as necessary.

14. If not installed, carefully install the manual valve into bore, and the 1/2" checkball in between the vertical insert checkball seats as shown below.



DO NOT install checkballs in any stock locations in the case. There should be one ball in the valve body, and none in the case.

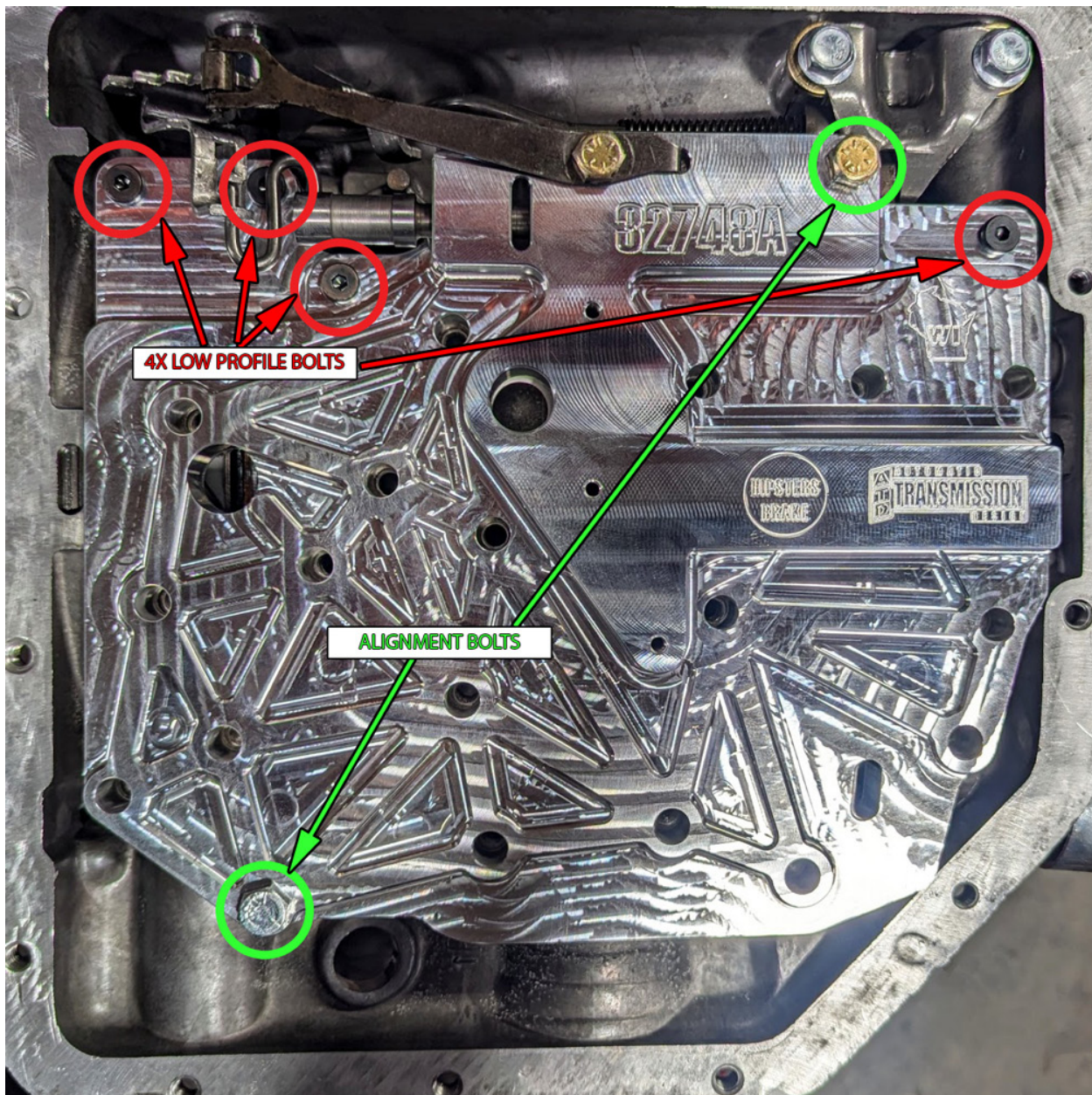
15. Install transbrake valve body with included separator plate.

DO NOT install any gaskets on the case or valve body!

USE ONLY S-Link style manual valve linkage. Do NOT use Z-Link style.

Install the (2) alignment bolts in the locations noted below first, next the (4) low profile bolts, the detent spring bolt, and finally the remaining valve body bolts.

Start all bolts by hand before tightening! Torque bolts to 15 lb-ft.



16. Omit the governor.

17. Install the included 727 style filter with filter extension and hardware, pan, and oil.

Use only the provided filter screws when installing the filter extension. If not utilizing the filter extension, use 10-24 screws no longer than 1/2" in length. Use of longer hardware will result in undesirable results and/or damage.

Do not over tighten the filter screws - 20 in/lbs MAX.

18. After transmission installation, place car on jack stands and test transbrake operation.

19. Smoke the competition.

NOTES

- This valve body uses an adjustable pressure regulator that has been preset to approximately 200 psi. See supplement notes below for adjustment.
- This valve body is dual feed design - it supplies direct clutch oil to both circuits with no additional modifications. You can install all of the direct clutch sealing rings on the pump stator, or omit the second ring - there is no difference in function with this transbrake.
- ***This valve body is transbrake hot in 1st and 2nd gear at all times. Energizing the solenoid at speed will apply the transbrake - transbrake safety/lockout is your responsibility.***
- There is no engine braking function in 1st or 2nd gear.
- All transbrake transmissions should have 5 clutches in low/reverse and in direct.
- Use of Teflon sealing rings and a deep pan is highly recommended.
- **DO NOT MODIFY THE MANUAL VALVE. VALVE BODY IS READY TO INSTALL AS SHIPPED.**

PRESSURE ADJUSTMENT/PRESSURE REGULATOR SUPPLEMENT

Line pressure changes are achieved by adjusting the pressure regulator set screw. Your billet transbrake will be pre-set at approximately 200 psi prior to shipping. To adjust the pressure, follow these steps carefully:

1. Use the provided 1/2" hex tool and a 1/2" wrench, install the hex tool into the jam screw in the pressure regulator bore, noting the current position of the inside adjuster screw.
2. 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.
3. The pre-set line pressure is recommended for most applications. Do not increase pressure unless you experience holding problems. The maximum achievable line pressure is limited to 250 psi.

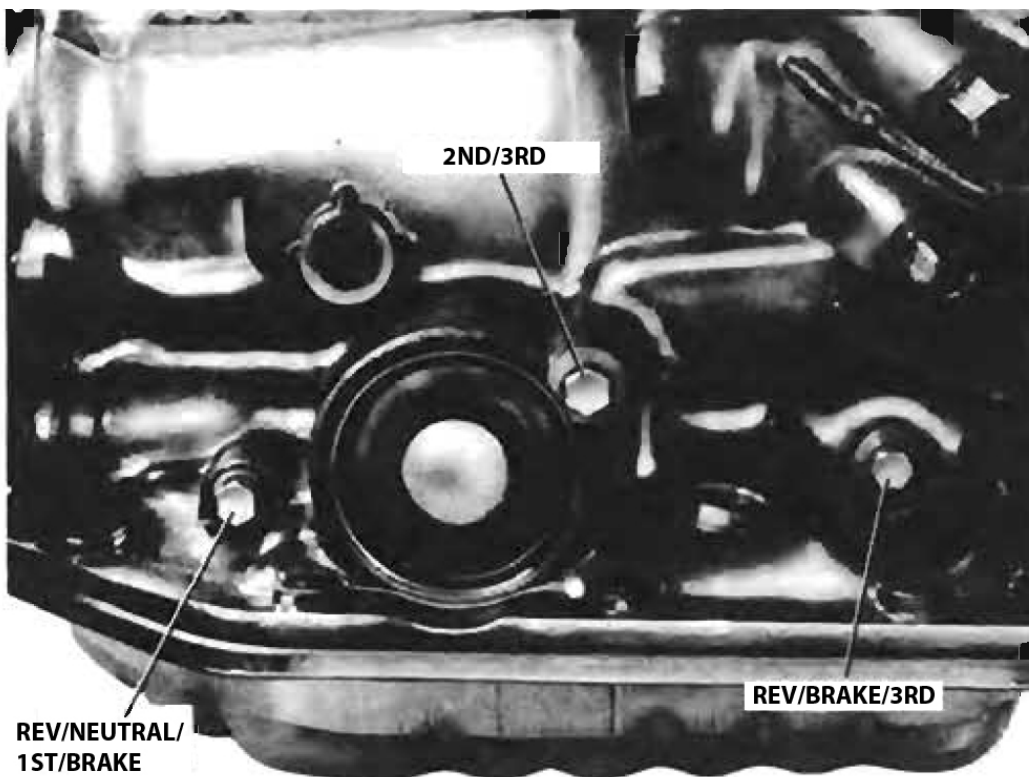
Do not over tighten the adjuster screw.

Pressure readings in excess of 250 psi indicate a problem with the pressure regulator circuit; please contact us for technical support.

4. After making your pressure adjustment, remove the hex tool, reinstall the pan, refill completely, and check the adjustment using a pressure gauge.

To reset ATD factory pressure, bottom out the adjuster screw, and back it off 2.5-3 turns.

Verify all pressures using a gauge with at least 300 psi capacity by testing at the ports noted below.



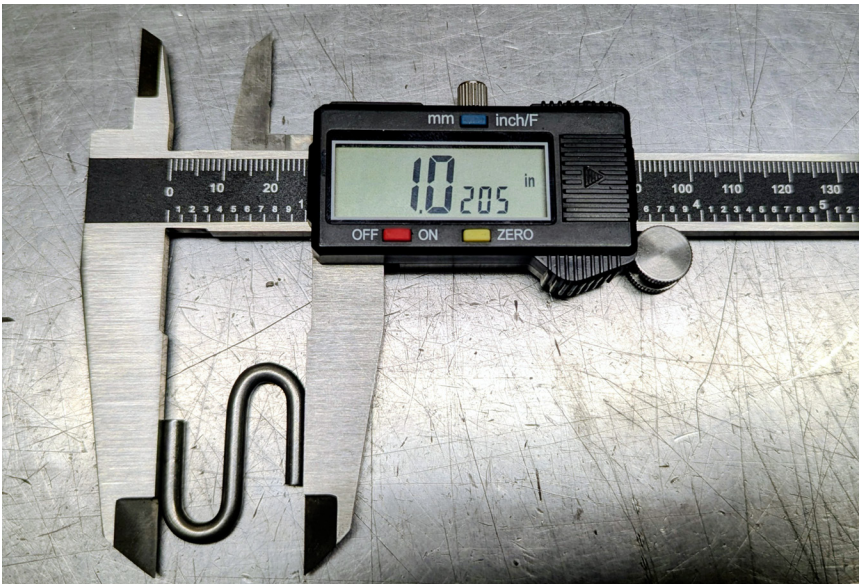
If you run any debris through the transmission that contaminates the valve body, cleaning is performed by removing the manual valve and pressure regulator assembly from the valve body. Remove the pressure regulator by removing the PR adjustment screw and carefully sliding the spring and valve out of the bore. Handle the pressure regulator valve with care - scored valves will ruin the bore finish. Thoroughly solvent flush all passages, manual 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 2.5-3 turns for factory pressure. Repeated disassembly of the pressure regulator assembly and/or valve body may cause premature failure of the threads and/or bores.

Do not use any other pressure regulator spring with this valve body!

TECHNICAL HELP IS AVAILABLE MONDAY-FRIDAY, 9 AM - 5 PM CST BY CALLING: (262) 251-7777.

***** CRITICAL MANUAL VALVE S-LINK ADJUSTMENT INFO: *****

**THE S-LINK OVERALL LENGTH MUST BE VERIFIED FOR PROPER MANUAL VALVE PHASING!
USING A CALIPER, MEASURE THE OVERALL SPAN LENGTH OF THE S-LINK AS SHOWN BELOW.
THE LINK MUST BE IN THIS RANGE: 1.020-1.030"**



VALIDATE THE VALVE PHASING AS SHOWN BELOW, IN REVERSE POSITION:

