



# ***BD PERFORMANCE TRANSMISSION***

## **Allison Installation Instructions**

2WD Transmissions		
<b>1064702</b>	2000-2003 <b>LB7</b>	1000
<b>1064722</b>	2004-2005 <b>LLY</b>	1000

4WD Transmissions		
<b>1064704</b>	2000-2003 <b>LB7</b>	1000
<b>1064724</b>	2004-2005 <b>LLY</b>	1000

***Please read the instructions and disclaimer before beginning installation.***

### **BD Engine Brake Inc.**

Plant Address: #A10 – 33733 King Road, Abbotsford, BC, Canada V2S 7M9  
 US Shipping: #88 – 446 Harrison St., Sumas, WA, USA 98295 | US Mailing Address: P.O. Box 231, Sumas, WA, USA, 98295  
 Phone#: (604) 853-6096 | Fax: (604) 853-8749 | Web: [www.dieselperformance.com](http://www.dieselperformance.com)

**REMOVAL:**

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- 1) Park the vehicle, apply the park brake, and open the hood.
- 2) Record your sound system and clock preset settings (if desired) and disconnect both negative cables on the batteries.
- 3) Remove the transmission dipstick.
- 4) With the vehicle safely supported on an overhead hoist, remove the transmission pan drain plug and drain the fluid.
- 5) Remove both front skid plates for easy access to components.
- 6) Remove both bolts (15mm hex socket or wrench) holding the starter in place and with rope or wire, secure the starter up and out of the way on the frame. This allows for access to the torque converter/flex plate bolts through the starter opening. **NOTE:** The starter wires do not have to be disconnected to perform this operation.
- 7) **Torque Converter (TC) removal procedure:**
  - a. Locate the transmission/bell housing window at the lower left corner.
  - b. View the converter and flex drive plate through this window.
  - c. Use a 1 ½" box end wrench on the crankshaft front damper bolt to turn the crankshaft until the flex plate holes come into view as seen through the window from below. This indicates a removal point.
  - d. Shine a flashlight through the right side frame and suspension members to locate the converter mounting bolts through the starter mounting opening.
  - e. As each mounting bolt is lined up, apply a small paint pen dot to the front damper, and one dot to an adjacent stationary surface. This allows for easy re-assembly as the dots may be lined up while turning the crank from the front.
  - f. Remove each of the six mounting bolts (15mm hex head bolts with 5/16" allen head socket as well) using an extra long extension and ratchet extending clear through to the front of the engine. **NOTE:** A magnet may be required to extract the bolts once they are removed because of their location within the recess of the ring gear plate.
  - g. The converter should now be unbolted from the flex plate within the bell housing enclosure.
  - h. During re-assembly, using the same long extension but using a 5/16" Allen head socket may better control the converter mounting bolts
- 8) Remove both front and rear drive shafts and tape some plastic over the transfer case rear boot to keep fluid from leaking during its removal.
- 9) Remove all wiring harnesses and shift linkages with their respective hold down devices and swing them carefully to the left of the transmission and strap them temporarily to the frame.
- 10) Position a suitable transmission jack under the flat area of the pan, ensuring the transmission is secured to the jack. Be careful, as the transmission weights over 300lbs.
- 11) Locate the two oil cooler tube fittings on the right side of the transmission, then pop the ring back on the fitting and pull the snap/lock ring from its slot. Use a catch tray when unseating the

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pipes to collect draining fluid and use cap plugs on pipes and fittings to keep dirt from entering.

12) Lift the transmission slightly and remove the rear cross-member.

13) Remove the nuts (15mm) holding the transfer case to the transmission and slide the transfer case off its mounting studs. Rotate it counterclockwise within the frame and front suspension torsion bar beam until it clears and can be removed by lowering it.

**NOTE:** This allows the torsion beam, torsion bars, and accompanying components to be left undisturbed.

14) Remove all transmission-to-engine bell housing fasteners, taking note of their locations and type as some are 15mm hex head cap screws and others are 15mm “stud” bolts. Ensure all fasteners are removed, especially the one at the 12 o’clock position at the top of the unit.

15) Roll the transmission assembly backwards, then lower and remove the assembly from under the vehicle.

16) Using two of the 15mm “stud” bolts at opposite sides (180° apart) of the torque converter, gently pull the converter out of the transmission while holding the studs for control with a drain pan beneath to catch any fluid. The converter may be placed face down to further drain fluid if desired.

## ***INSTALLATION:***

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Installation is the reverse of the removal procedure. Refer to the next page for proper tightening specifications.

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## Fastener Tightening Specifications

Application	Specification	
	Metric	Imperial
Control Module Cover to Radiator Shroud Bolts	9 N·m	80 lb in
Control Valve Assembly to Main Housing Bolts	12 N·m	108 lb in
Converter Housing to Front Support Assembly Bolts	56 N·m	41 lb ft
Detent Lever Retaining Nut	29 N·m	21 lb ft
Detent Spring Assembly to Main Valve Body Bolts	12 N·m	108 lb in
Filler Tube Bracket to Transmission Nuts	18 N·m	13 lb ft
Fuel Line Bracket to Transmission Nut	18 N·m	13 lb ft
Fuel Line Retainer to Transmission Bolts	2.5 N·m	22 lb in
Heat Shield to Transmission Bolts	17 N·m	13 lb ft
Heat Shield to Transmission Nut	25 N·m	18 lb ft
Hydraulic Connector Assembly	25 N·m	18 lb ft
Input Speed Sensor to Torque Converter Housing Bolt	12 N·m	108 lb in
Main Pressure Tap Plug	12 N·m	108 lb in
Oil Cooler Line Clip to Oil Pan Nut	9 N·m	80 lb in
Oil Cooler to Radiator Brace Bolts	12 N·m	106 lb in
Oil Pan Drain Plug	35 N·m	26 lb ft
Oil Pan to Main Housing Bolts	27 N·m	20 lb ft
Output Speed Sensor to Rear Cover Bolt	12 N·m	108 lb in
PNP Switch to Main Housing Bolts	27 N·m	20 lb ft
Pressure Switch Assembly to Main Valve Body Bolts	12 N·m	108 lb in
PTO Cover(s) to Main Housing Bolts	43 N·m	32 lb ft
Shift Cable Bracket to Transmission Bolts	25 N·m	18 lb ft
Shift Cable Support to Steering Column Brace Bolt	10 N·m	89 lb in
Shift Lever to Shift Selector Shaft Nut	24 N·m	18 lb ft
Shipping Bracket to Torque Converter Housing Bolts	27 N·m	20 lb ft
Shipping Bracket to Torque Converter Lug Bolts	27 N·m	20 lb ft
Torque Converter to Flywheel Bolts	27 N·m	20 lb ft
Torque Converter Housing Inspection Cover to Transmission Bolts	10 N·m	89 lb in
Transmission Mount to Adapter Bolts (4WD)	47 N·m	35 lb ft
Transmission Mount to Transmission Bolts (2WD)	50 N·m	37 lb ft
Transmission Mount to Transmission Support Nuts	40 N·m	30 lb ft
Transmission Support to Frame Nuts and Bolts	70 N·m	52 lb ft
Turbine Speed Sensor to Main Housing Bolt	12 N·m	108 lb in
Wire Harness/Vent Tube Bracket to Transmission Nut	18 N·m	13 lb ft
Yoke Assembly to Output Shaft Bolt	123 N·m	91 lb ft

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## BD ENGINE BRAKE, INC. LIMITED WARRANTY STATEMENT

BD Engine Brake, Inc. (BD) warrants to the original purchaser that any parts purchased shall be free from defects in material and workmanship. BD limits the liability to the repair or replacement, at BD's option, of any warrantable product returned prepaid with a complete service history and proof of purchase. A valid proof of purchase is a dated bill of sale. Repaired or replaced product will be returned to the customer freight collect. Accepted warranty units, which have been replaced, become the sole property of BD.

A Return Material Authorization (RMA) number, obtained in advance from a BD customer service representative, must accompany product, returned prepaid by the purchaser, for warranty determination. BD will be the final authority on all warranty decisions.

This parts warranty shall terminate at the end of 12 months or 24,000 miles in service with original user, whichever comes first. Labor costs incurred by the removal and replacement of a BD Performance Converter while performing warranty work, will be covered for 12 months at authorized centers with prior approval. Until the product has been approved at the original installing dealer or at one of our distributors, the consumer should cover these costs.

### **NOT COVERED UNDER THIS WARRANTY**

This warranty shall not apply to any unit that has been improperly stored or installed; or to misapplication, improper operation conditions, accidents, or neglect, or which has been improperly repaired or altered or otherwise mistreated by the owner or his agent.

The nature of this product is PERFORMANCE and is designed to perform at above OEM specifications. This product was designed with this in mind and should NOT be used in RACING and/or HIGH HORSEPOWER applications and will only be considered for warranty on vehicles with a maximum of 450 REAR WHEEL HORSEPOWER. Using this product on vehicles with a higher rating will cause premature failure and therefore BD will not consider such claims. BD reserves the right to void the transmission warranty if a BD torque converter is not used throughout the warranty period of the transmission.

Except as set forth in our parts outline, BD disclaims any implied warranties of merchantability and fitness for a particular purpose. BD also disclaims any liability for incidental or consequential damages including but not limited to, repair labor, rental vehicles, hotel cost or any other inconvenience cost. This warranty is in lieu of all other warranties or guaranties, either expressed or implied, and shall not extend to any consumer or to any person other than the original purchaser residing within the boundaries of the continental U.S. or Canada.



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