

## TURBOCHARGER INSTALLATION INSTRUCTIONS

**IT IS STRONGLY RECOMMENDED THAT THE COMPLETE TURBOCHARGER BE CHANGED OUT. FAILURE TO DO SO LEADS TO PREMATURE FAILURES AND MAY VOID WARRANTIES.**

Alamo turbochargers are shipped with the following lines sealed with plastic or metal plugs:

1. Oil inlet line;
2. Oil drain line;
3. Coolant inlet line; and
4. Coolant drain line.

These **PLUGS MUST BE REMOVED** prior to installation!

### Step 1. PRE-INSTALLATION

Before installing turbocharger make sure the following are checked:

- Ensure turbocharger part number is correct for engine application.
- Air filters are clean and piping free of all foreign material and flanges are true.
- Ensure there are no leaks in any air piping.
- Check exhaust manifold and remove any loose material.
- Ensure oil supply and drain lines are cleaned and free of debris and remove old gasket material.

### Step 2. REALIGNMENT OF HOUSINGS

- a) Loosen the compressor and turbine housing bolts and/or V-band nut(s), only the minimum required to rotate the housings. Excessive loosening of the housings will allow contact and possible wheel damage.
- b) Temporarily secure turbocharger to exhaust manifold outlet.
- c) Rotate the center housing so that the oil inlet and outlet pads mate with the engine oil lines. The oil outlet hole may not be more than 20° from vertical. Tighten bolts or V-band clamps to lock center housing to turbine housing.
- d) Rotate compressor housing until it lines up with intake manifold or air piping. Tighten bolts or V-band to lock center housing to compressor housing. Use torque settings recommended by the turbocharger/engine manufacturer.
- e) Remove turbocharger off of engine and tighten all bolts/V-bands. Tighten bolts alternately from side to side to ensure the housings are properly seated. When tightening V-bands, tap the V-band gently with a soft mallet to ensure band is seated completely. Use torque settings recommended by the turbocharger/engine manufacturer. On bolted housings, bend lock plate tabs against a flat on each bolt head, taking care not to loosen the bolt. V-band nuts are self locking.

### Step 3. INSTALLATION AND PRE-OILING OF TURBOCHARGER

- a) Install turbocharger on engine using new gaskets and anti-seize compound on studs and bolts.
- b) Tighten turbocharger to the exhaust manifold, and install the oil drain. **DO NOT** use silicone sealer or Teflon tape on oil inlet lines or flanges.
- c) Fill the oil inlet hole with engine oil recommended by the engine manufacturer and spin the compressor wheel several times to coat the bearings with oil. Refill the oil inlet hole and connect the oil supply line. (If compressor wheel cannot be spun freely by hand or if there is any indication of rubbing or scraping, determine the reason before starting the engine or failure will occur.)
- d) Connect turbocharger inlet and outlet hoses/piping.

### Step 4. STARTING ENGINE

- a) Before attempting to start the engine prelube engine, or crank engine with the fuel shut off until oil pressure is present. Verify oil is at the level of the turbocharger. After the oil presence is verified at turbocharger, tighten oil inlet fitting and line and clean off any oil residue from exterior of oil lines and turbocharger.
- b) Start and run engine at idle for four to five minutes before increasing RPM and applying load to the engine.
- c) CHECK FOR OIL, EXHAUST AND AIR LEAKS.

## **WARRANTY POLICY**

**Alamo Industries Ltd. and Alamo Turbocharger Services Inc. (hereafter referred to collectively as “Alamo”) guarantees Parts and Workmanship for a twelve (12) month period from the date of invoice with the following exceptions:**

1. Variable Geometry Turbochargers (excluding actuator) will be warranted for a period of 90 days from date of invoice. Pneumatic actuators will be warranted for a period of 90 days from the invoice date whereas electronic actuators are warranted for a period of 30 days from invoice date.
2. Electronics will be warranted for a period of 30 days from the date of invoice. Consideration with respect to workmanship and manufacturer defects will be offered on a case-by-case basis.
3. NO warranty consideration will be given for any actuator (pneumatic or electronic) that was not supplied by Alamo. Also, if the actuator is removed from the turbocharger or altered in any way, warranty is VOID.
4. There will be NO warranty consideration for turbochargers on applications that have been mechanically or electronically modified from the OE (i.e.: deletes and electronic programmers).
5. There will be NO warranty consideration for any turbocharger or actuator without the as sold tag affixed. Nor will there be any warranty consideration for any turbocharger or actuator that has been disassembled by persons who are not authorized representatives of Alamo.
6. Warranty does not extend beyond any item(s) that are supplied, serviced, repaired or manufactured by Alamo.

### **CUSTOMER RESPONSIBILITIES:**

1. All turbochargers and components must be maintained in accordance with published maintenance practices.
2. Alamo must be notified immediately of any potential warranty issue. An Alamo authorized representative must be involved in all aspects of analysis of any turbocharger that is presented as being warrantable.

### **ITEMS NOT INCLUDED:**

Under no circumstances will Alamo be responsible for damage or loss of production consequential to a turbocharger or actuator failure during a covered period. Alamo will not pay for charges incurred for another company to remove or transport a turbocharger.

### **OTHER:**

1. Alamo must have full and complete access to all engine logs (upon request).
2. In potential warranty situations, Alamo reserves the right to access equipment on a customer location to obtain oil, glycol, and foreign material samples for analysis in a laboratory deemed acceptable by Alamo.
3. Warranty consideration will only be extended to the original purchaser.
4. Alamo does not cover damaged, lost or stolen packages or shipments being transported from or to the customer.

### **IN ADDITION:**

Alamo's core business focus is turbochargers, turbocharger components and related turbocharger accessories. However, Alamo does offer other services. The aforementioned Warranty Policy and customer responsibilities will be applied to all products supplied, serviced, repaired or manufactured by the Alamo Group of Companies.

## **RETURN POLICY**

A restocking fee may be applicable to returned items at the discretion of Alamo. All return shipping costs are to be paid by the customer.