

Performance Converter Kit

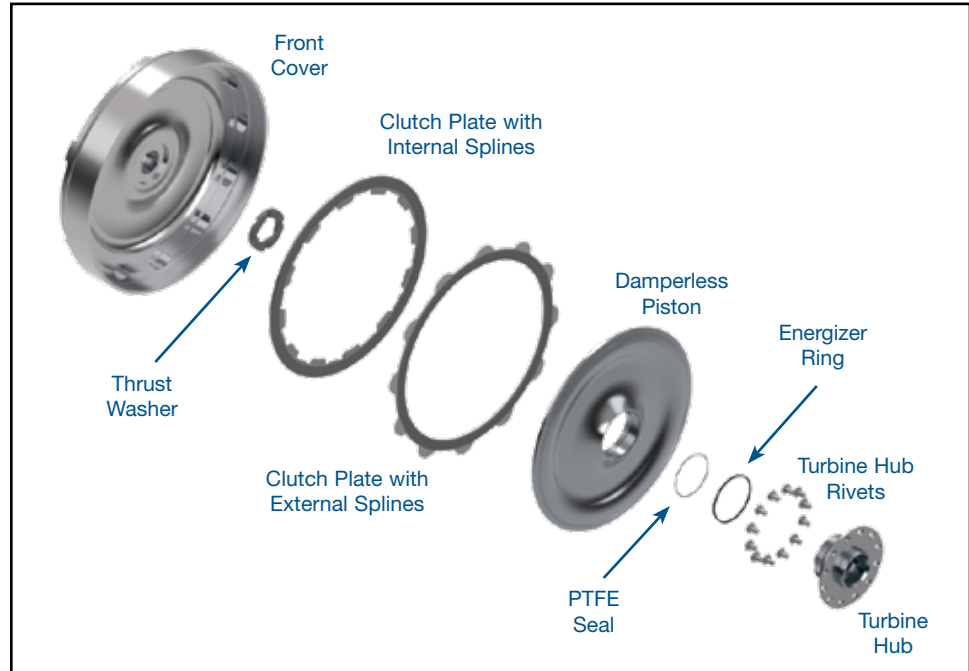
Part No.

AL-RK-3

- Turbine Hub
- Turbine Hub Rivets (12)
- Energizer Ring
- Seal, PTFE
- Damperless Piston
- Clutch Plate with External Splines
- Clutch Plate with Internal Splines
- Thrust Washer
- Front Cover

Allison® 1000/2000/2400 Early & '06-Later Multi-Plate

Unit Size: 13.5" • Core: Allison 1000/2000/2400 • Dampened: No • Turbine Hub Input Spline Count: 25



This performance converter kit combines the OE fluid coupling (impeller, stator and turbine) with all-new front cover, clutch plates, piston and turbine hub to boost the converter capacity. The lockup clutch is not a salvaged OE clutch, it is a new and unique design.

1. Impeller Assembly

- a. Clean and inspect the OE impeller.
- b. If the blades are loose, either repair by brazing/welding or find a different impeller.
- c. Remove OE impeller hub:
 - **2005-Earlier Cores:** Replace the OE impeller hub with either **AL-90-2G** or **AL-90-3G**. **AL-90-3G** allows updated **AL-N-1** enclosed bearing to be used with the **AL-WA-2** bearing adapter. This replaces the early problematic open bearing and race.
 - **2006-Later Cores:** Replace the OE impeller hub with **AL-90-4G** if needed.

2. Stator Assembly

- a. Disassemble the OE stator assembly.
- b. Clean and inspect the stator.
- c. For 2006-later cores, no machining is required. For 2006 and 2007 cores, the stator cap and bearing race will need to be replaced with **AL-WA-3**. For 2008-later cores, the stator cap, bearing race and partially enclosed bearing will need to be replaced with an **AL-WA-3** or **AL-WA-4** stator cap and **AL-N-2** enclosed bearing. To determine which stator cap is needed, measure the total thickness of the OE stator cap and bearing race. Replace with **AL-WA-3** if total thickness is .482" and replace with **AL-WA-4** if total thickness is .513".

2. Stator Assembly (continued)

For 2005-earlier cores, the stator is machined as follows (**Figure 1**):

- Remove retaining pocket wall by machining flush with surface "C"
- Machine the stator I.D. to 2.417-2.409" to accept **AL-WS-3**. Remove any burrs.

NOTE: When installing stamped version **AL-WS-3**, ensure the bearing spacer is seated flat on the mating machined stator mounting surface. Due to die-cast stator slot variations, it may be necessary to rotate the bearing spacer into adjacent slots until spacer tabs fit freely and bearing surface is flat.

d. Replace the sprag and races.

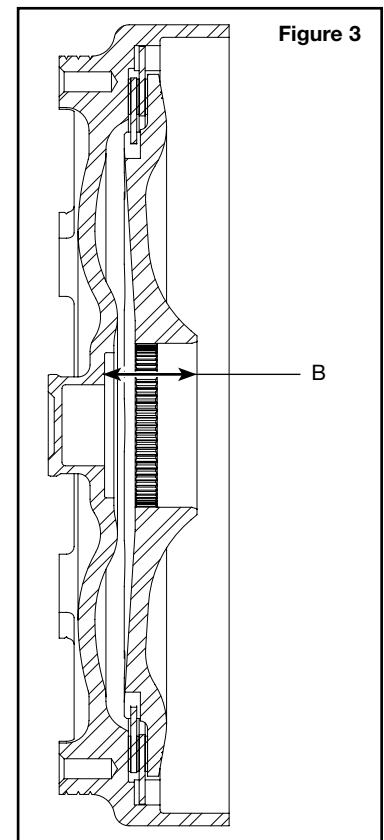
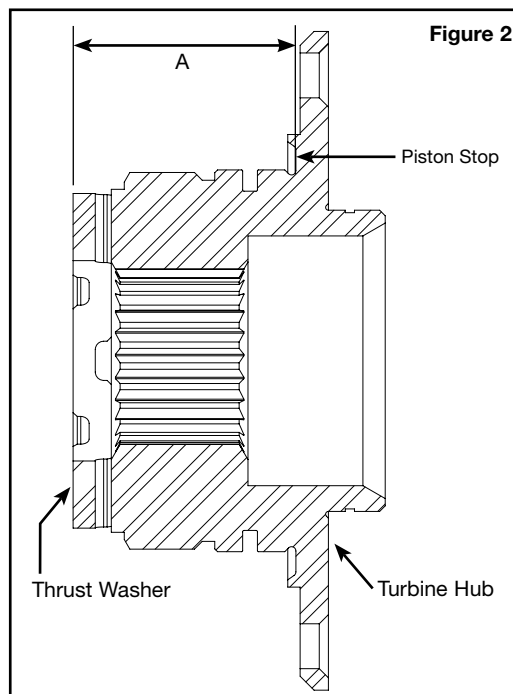
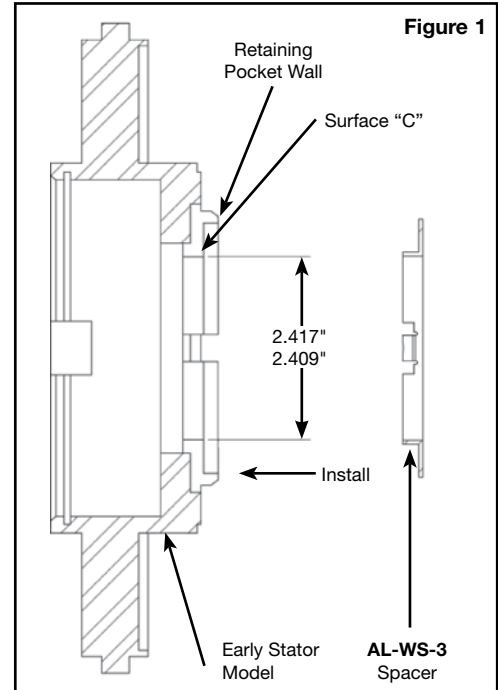
3. Turbine Assembly

- Remove the OE rivets and separate the turbine hub from the turbine.
- Clean and inspect the turbine. If any blades are loose, repair by brazing/welding or find a different turbine to use.
- Install the new turbine hub from the stator side and install new rivets. Weld the turbine hub in on high torque applications for extra security.
- Install the energizer ring (O-ring) into the groove on the turbine hub, then the PTFE ring in the same groove.

4. Measure and set the clutch release clearance

The clutch release clearance should be measured and adjusted as necessary.

- Measure from the piston stop of the turbine hub to the thrust face of the washer (Measurement "A" in **Figure 2**).
- Place the clutch plates and piston into the front cover, see section 5. Final Assembly to ensure these are properly aligned **Figure 3**).
- Measure from the inner lip of the piston bore to the thrust face on the front cover (Measurement "B" in **Figure 3**).
- The difference between the two measurements (A-B) is the amount of clutch release clearance. It is recommended to set clutch release clearance between .040-.060".
- If there is too much clutch release clearance, machine the thrust surface of the front cover by the amount that you want to reduce the clutch release clearance (**Figure 4**). Make sure to maintain a RA 16 micro-inches surface finish and keep the thrust surface parallel to the mounting pads (see "A" in **Figure 4**) within .002".



4. Measure and set the clutch release clearance (continued)

If you want to increase the amount of clutch release clearance, machine the lock-up surface of the front cover by the amount you want to increase the travel. Make sure to keep the surface finish better than RA 20 micro-inches and parallel to the mounting pads (see "A" in Figure 4) within .003". A poorly machined lock-up surface will greatly compromise friction paper life.

f. After machining the front cover, re-measure A and B measurements and verify clutch release clearance.

5. Final Assembly

- Drop the internally splined (dual friction) clutch plate into the front cover (Figure 5).
- With the steel side towards the cover and the friction side towards the piston, install the externally splined (single friction) clutch plate into the front cover, rotating to engage the splines (Figure 5). Be sure this clutch plate fits freely without any binding in the cover.
- Install the piston and rotate it to engage the internally splined clutch plate.
- From this point on, assemble the converter as normal.

NOTE: Remember that 2005-earlier cores need to be converted to use the **AL-N-1** and **AL-N-2** enclosed stator bearings. 2006-Later cores use the **AL-N-1** and **AL-N-2** enclosed stator bearings.

- Continue converter assembly. The endplay should be between zero and .010" and internal clearance should be between .100-.110" for maximum efficiency after welding. The stator should be able to turn freely.
- Pressure check the unit.
- Balance finished unit.

