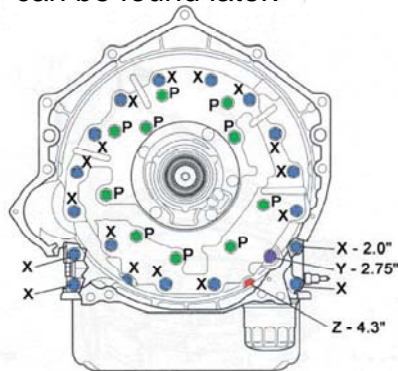




**Installation Manual v1.0:  
ATS Allison Pump Kit**

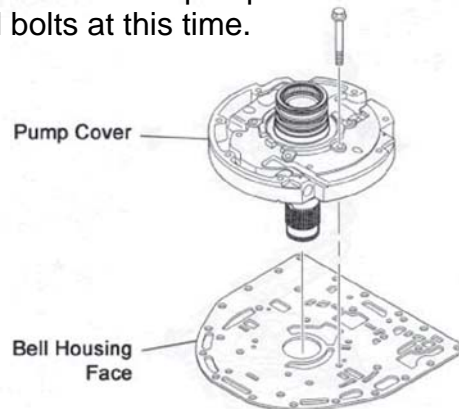
**Please read all instructions before installation.**

- 1) Remove the thirty (30) bolts (marked with a P, X, Y, Z) from the front of the bell housing that attaches it to the transmission case and place them in a convenient place so they can be found later.



**Figure 1**

- 2) You are now ready to remove the bell housing from the transmission case. Gently lift the bell housing up off of the transmission case. While lifting upwards on the bell housing, gently twist from side to side. This will help separate the gasket from the bell housing and the transmission case. The bell housing should separate from the transmission freely.
- 3) After removing the bell housing from the transmission case, place the bell housing on the floor or on a bench facing down. At this point you will be able to see the bolts that attach the pump cover to the bell housing. Remove all five (5) 10mm head bolts at this time.



**Figure 2**

- 4) Now that all of the bolts have been removed from the pump cover you are ready to separate the pump cover from the bell housing. Grab the pump cover with your hands and lift straight up. There are two dowel pins that center on the bell housing, gently rock the cast iron pump cover while pulling in an upward direction. The two pieces will separate. **DO NOT** use a chisel or any like device to pry the pieces apart, permanent damage could result, gently rock the two pieces while exerting upward force to separate the pump cover from the bell housing, place the pump cover on its opposite side. You will see the valves inside the pump.
- 5) You are now ready to replace the line pressure regulator valve located in the pump cover. Remove the factory spring retainer, seat, spring and valve located in the pump cover (Figure 3). **Use caution when removing retainer as it is under tension.** It is recommended that you have someone help you with this step.

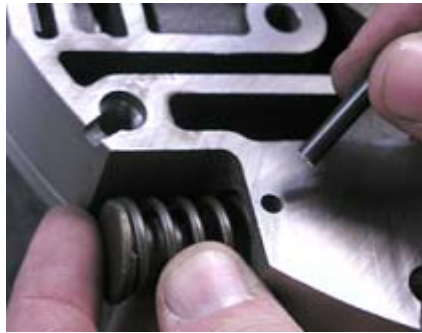


Figure 3

- 6) Install the new ATS pressure regulator valve (Figure 4), spring (Figure 5), seat and retainer pin (Figures 6 & 7) – **use caution! ATS spring will go in under a lot of tension.**



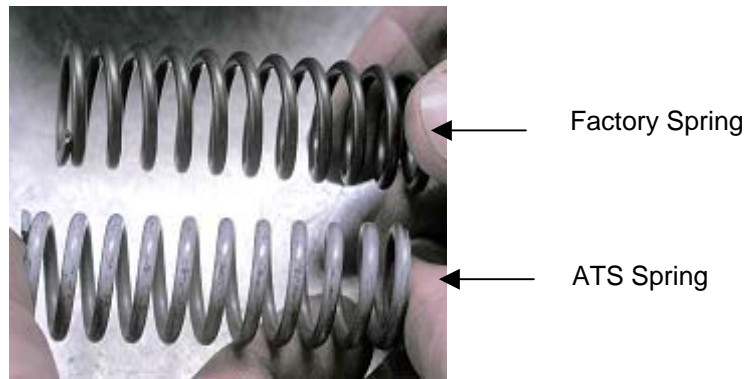
Figure 4



← Factory Valve & Spring

← ATS Valve & Spring

Figure 4A



**Figure 5**



**Figure 6**



**Figure 7**

- 7) Next, replace the front and rear pump gaskets (included in kit). Use care not to 'scratch' pump plate while removing old gaskets.
- 8) At this time you are ready to reassemble the pump cover to the bell housing. Locate the dowel pins that are in the pump cover, these two pins are used to center the pump cover into the pump and align the pump to the bell housing. Use these two dowel pins as guides and reassemble the two pieces. Now place the five (5) bolts back into their locations. Using the illustration (Figure 1), torque the bolts in a star pattern order to 18 to 21 ft-lbs. Go over the sequence twice to ensure the bolts are tight and are of equal torque.
- 9) Install the pump and bell housing assembly onto the transmission, being sure to line up gaskets.
- 10) Re-install the 30 bolts (marked with a P, X, Y, Z in Figure 1) into the front of the bell housing and torque to 38-45 foot lbs.

**Have Any Questions?**

Thank you for purchasing the ATS Allison Pump Kit. Please check our website at <http://www.atsdiesel.com> for technical support and other performance products such as the 5-Star™ torque converter, ATS High Performance Valve Body and ATS High Performance Transmission along with our full line of power enhancers. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

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We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction.

We encourage you to visit our Technical Support Website (<http://www.atsdiesel.com/ATSWebsite/Technical.asp>) to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at <mailto:Suggestions@ATSDiesel.com>.