



Advanced Innovative Machinery

## VP-SDR ST Clutch Installation Instruction

*There will be some differences in removal of the shift lever and the foot board / peg on forward and mid control bikes. For more in depth instructions, please refer to your service manual.*

1. Place bike on the stand and center the bike as best as possible. While giving enough room to fit a drain pan under the primary cover.
2. Drain the primary fluid from the bike.
3. While draining, remove shifter lever off from the bike.
  - a. **Note:** Please note the original orientation of the shifter lever. This will need to be reinstalled in the correct position in the end.
4. Remove the left side foot peg bracket to make room for the primary cover removal (Not required for forward controls but will help with installation process).
5. Remove all surrounding 3/16's bolts from the primary cover.
6. Loosen the spring retainer on the clutch evenly using 10mm socket wrench.
  - a. **Note:** Hold and apply pressure to the pressure plate upon removal to keep the clutch plates in place so they do not miss align.
7. If you purchased a set of an optional spring kit, replace the stock springs in place of the new upgraded springs.
  - a. **Performance Spring Kit (AM008-005):** No Shim – 20% Stronger than Stock. Insert two shims per spring at the bottom so it serves as the contact point between the spring and the A&S Pressure plate. Every additional shim is an extra 10% increase in stiffness. With this setup, expect the torque capacity to hold around 180lbs-ft of torque at 3500RPM.
  - b. **Soft Clutch Spring Kit (AM008-007):** Installed with the VP-SDR will achieve 20% clutch pull reduction depending on the stock spring rate configuration. With this setup, expect the torque capacity to hold around 130lbs-ft of torque at 3500RPM.
8. Install the 3 tabs shim in the center of the pressure plate.
9. Install the new VP-SDR ST unit with the factory hardware.  
**Torque to 7.5-9.2 ft-lbs. (10.2-12.4 Nm)**
10. Before installation of the primary cover spacer.
  - a. For mid control bikes, please use the provided small spacer over the shift lever shaft and supplied gasket.
11. Factory primary cover gasket can be reused; however, a new gasket would be recommended.



Step 3: Remove foot board / peg for easier access to the primary cover.



Step 5: Remove all surrounding bolts.



Step 6: Loosen and remove the 3 10mm bolts holding the retaining plate.



Here is a perfect time to install the wear shim and replacement springs if necessary.

12. Install the primary gasket first then spacer followed up by another gasket.
13. Adjust the clutch cable accordingly per Harley Davidson's specifications.
14. Please use the factory primary cover bolts for reinstallation. Factory bolts are long enough from the factory and will have adequate thread engagement for this spacer install. Torque to 80-90 in-lbs.
15. Reinstall primary drain bolt.
16. Double check to make sure everything is working correctly, and your clutch has proper engagement and disengagement.
17. For mid control bikes
  - a. When reinstalling the shift lever, take the black shift lever spacer and trim to half its length to accommodate for the spaced-out primary cover. This will provide enough clearance between the lever and the cover for proper fitment. Try to space the lever itself as far out as possible to avoid contact with the primary cover during operation.
  - b. Reinstall the foot peg using the supplied ¼" spacer to help extend to outward to avoid hitting the primary cover.
18. Forward control bikes
  - a. Reinstall footboard onto the bike. No spacer required as there is enough room even with a primary spacer installed.
19. Remove derby cover and fill the primary with your recommended fluid.
20. Double check for any leaks or loose bolts, and make sure the clutch has proper disengagement and engagement with no binding.
21. Double check the clearance between the VP SDR ST and the primary cover itself. There should be ample room now and there should be no contact whatsoever.
22. Now you can test the bike and to make sure there are no leaks or weird noises coming from the primary. You may hear the VP SDR ST in its idle position as the weights may be moving around, this would be more. As soon as the basket starts spinning the clutch weights will swing out with centrifugal force and there should not be any noise during operation.
23. To test to make sure everything is in proper working order, rev the motor to around 3.5 – 4k RPM to see if the clutch lever gets noticeably heavier. This means that the VP SDR ST is doing its job and applying proper clamping force to the pressure plate thus providing a higher overall torque capacity.



How the SDR ST High Performance version looks like when installed on the clutch system.



Mid control bikes are required to install small ¼" spacer onto the shift linkage. Without this spacer and gasket, there will be a potential leak from the primary.



Install the primary gasket first then the primary spacers followed up by another gasket.



Torque all necessary bolts and fill the primary with proper fluids. Please refer to your owner's manual for proper fill procedures.

PN: VP044-SDR

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