

Dalton Pro ATV Clutch Kit

Model: 2017,18 **Polaris Sportsman 450** 25-27" Tires, 0-4000 ft. elevation.

**This kit is designed for 25-27" Trail/Mixed Mud tires, and has a listing within the set up guide for the use of an additional, optional secondary spring for use with 28" and larger tires.*

Components: 1 Dalton Blue/Silver primary spring (part # DPPS-BL/S)

1 Custom curve billet helix - private label (part # DAP-450N)

Note: *For 28" and larger tires*

*order optional **Black with Red/Silver** stripes torsional secondary spring (part number (DPSS- B/R/S)*

Tools:

Primary clutch puller bolt can be used to completely remove the primary clutch, but not required. A primary clutch puller makes for easier drive clutch service if you intend to do more clutch work in future(maintenance), or remove the drive clutch for easier work and inspection. Polaris dealers have them or can order Dalton part # DCP-A. (dealer installation recommended)

Secondary clutch compression tool. Polaris dealers all have this. This tool needed for secondary helix removal, adjustments, or secondary spring positioning, depending on the application.

Description: A clutch re-calibration kit for the Polaris Sportsman 450 ATV (450 is a model with regular Non Engine Brake clutches).

When you operate in soft terrain, or install heavier/larger tires there is a distinct loss of performance and efficiency. This kit helps recover those losses and gives better performance and improved belt grip. Set up guide includes instructions for adjustments to the secondary for different applications. This kit helps back shifting and gets the belt in the correct ratio on the clutches when the vehicle comes under load. This helps preserve belts.

WARNING

Clutch components should only be installed by factory trained mechanics and personnel with a complete knowledge of variable rate belt transmission systems or CVT's. Dalton Pro clutch components are made from high quality materials in a controlled procedure. NEVER cut, weld or manipulate clutch components

Some CVT clutches are assembled under spring pressure .DO NOT attempt to disassemble clutches if not experienced or qualified.

This is a performance kit and is intended for the use of experienced adult riders ,who are trying to obtain a higher level of performance for racing, etc. This kit should not be installed on any vehicle that will be used by any person of MINOR AGE. Dalton Industries has no control over the use, misuse, or installation of these components and assumes no responsibility for any injury or damage.

INSTALLATION: (dealer installation)

Important: Always remove the KEY from the ignition before working on clutches.

1) Remove seat, floorboard on clutch side, and accessories as necessary to access CVT clutch area. Remove the cover bolts to remove the plastic cover shroud.

2) Take note of **direction of belt** before removal. Remove belt. Remove primary clutch center bolt. Keep the spacers on the bolt and set the primary bolt aside.

3) * **Install primary spring** It is not necessary to remove the primary clutch, but it is sometimes good to have it on the bench for thorough inspection. If you are going to remove the primary, remove center bolt and thread the primary clutch puller into the drive clutch (motor clutch) and remove clutch now.

OR remove belt, outer clutch cover plate (6 bolts) and center bolt if leaving the clutch on the vehicle. **Be sure to look for alignment marks on cover plate or mark the clutch with a magic marker for orientation during re- installation.** *Be careful when removing primary bolts, the primary spring is under pressure. See service manual for more detailed procedure.*

4) With the belt removed and the primary clutch cover plate off, **change out the stock primary spring for the Blue/Silver spring provided.**

5) Re- assemble the cover plate with marks aligned, and torque the 6 bolts to manufacturers spec. These should not be over tightened.

Re- install the primary clutch center bolt and torque to manufacturers specs. (45-47 ft. lbs.)

****Complete the installation by installing the HELIX, and setting the secondary spring** according to tire size or application.

** All Tire Sizes use the provided primary spring*

****For 25" and up to and including most 27" tires** - General mixed riding of trails and some mud.

The STOCK secondary spring will be used for this application, but you will be **changing out the helix** and installing the new one provided in this kit. Mark the secondary clutch and helix for reference before you dis-assemble in the clutch compression tool or fixture. Be certain the fixture is compressing the helix before removing the snap ring.

Follow the procedures in the service manual if you have never performed this procedure previously.

It is important to note that the secondary spring needs to be "wound" properly on re-assembly! (see next page)



For this application, the secondary clutch spring will be remaining at **the factory setting of 2-2** in the torsional spring hook positions. (#2 hole in helix and #2 hole down in the clutch).



Installing and winding of secondary sheave/spring

The spring must be engaged in the proper holes first, then carefully look at the splines. There is a master spline that must be aligned on the shaft and helix.

Once the helix is “just started” on the splines, the movable sheave must be rotated approximately 1/3 turn to properly load the spring before compressing the helix the rest of the way into the clutch and securing the snap ring. Be certain the sliding buttons in the sheave assembly are aligned properly in the correct positions in the helix as you compress it. As mentioned, use setting 2-2 for 25-27” tires. (see service manual for detailed procedure).



**For Mid-Higher elevations (4000' + elevation)

You will need to use the supplied blue /silver primary spring, as well as the new helix, but **you will also need to adjust the stock secondary torsion spring to a tighter setting.**

For this application you will use **#2 on the helix and #1 down in the clutch** (The factory setting is with the tabs on the spring in hole #2 on the helix and #2 down in the clutch). Using #1 in the clutch will pre-load the spring more, and slow the up shift more to suit the application.

- ***This is for application described only. It will slow the upshift of the rear pulley and thus increase the shiftout rpm, may cause loss of top speed. More rpm is not always better. Only do this adjustment if necessary. There is great variation in tire weight, elevation and use. Some testing may be required for optimum calibration and rider preference. Some high elevations may require lighter flyweights and /or the optional secondary spring.***



Picture shows #1 hole in clutch

****28” tires** (0-4000' elevation) -All 28” applications and even some heavy 27” tires for mud application.

*Use the **OPTIONAL Secondary spring** Dalton Part# **DPSS-B/R/S** (Black with red and silver stripe)
- use **#2 spring position in the helix and #3 position down in the clutch**

****29.5” and larger** - use optional secondary spring and set in position 2-2.

Note: this spring is also often used with any tires at very high elevations of 6000' plus. Some spring torsion adjustment testing may be required for different tires/elevations).

Tuning notes: The 450 Sportsman operates well in the range of 6100-6400 rpm.
When traveling at slow speeds or in load conditions, use LOW range for best belt grip, performance.

Thank you for choosing Dalton Industries !

