

SM-01332 – Electric Start Kit

600 ETEC, 800 PTEK, 800R ETEC - 2009+



CAUTION – Failure to follow these instructions could not only cause premature product failure. We recommend installation be done by a certified technician and/or someone with knowledge of snowmobile electrical systems.

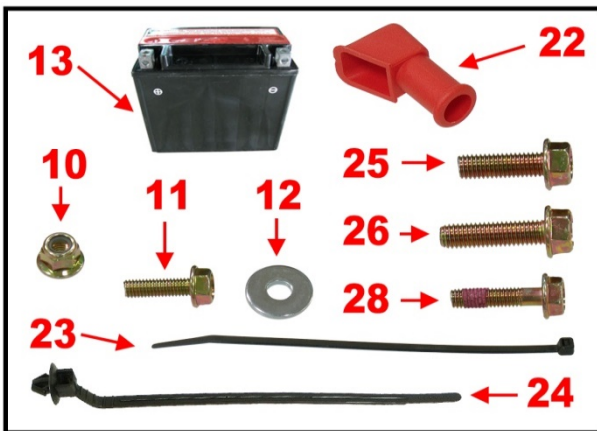
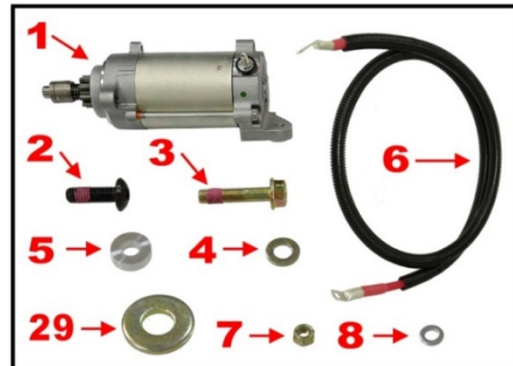


DISCLAIMER: This item is sold without any expressed or implied warranty of merchantability or fitness for a particular purpose. By purchasing and installing this product the user agrees to these terms; the Manufacturer, Distributor nor Dealer shall be held liable for any special, incidental, or consequential damages, including vehicle damage, death or injury, any loss of revenue, any incurred cost, or cost of purchase from the use or misuse of this product.

PARTS TO BE INSTALLED

ITEM	DESCRIPTION	QTY
1	Starter Motor	1
2	M8 x 25 Bolt	2
3	M8 x 35 Bolt	1
4	M8 Flat Washer	1
5	Spacer	1
6	Starter Cable	1
7	M6 Nut	3
8	M6 Flat Washer	1
9	Battery Support	1
10	M6 Nut	4
11	M6 x 20 Bolt	2
12	M6 Flat Washer (18 mm OD)	2
13	Battery (<i>not included</i>)	1
14	Battery Bracket	1
15	Starter Solenoid	1
16	M6 x 16 Bolt	3
17	BLACK Battery Cable	1
18	M6 Lock Washer	1
19	RED Battery Cable	1
20	Fuse Wire	1
21	Solenoid wiring Harness (long)	1
22	90° Protector Cap (red)	2

ITEM	DESCRIPTION	QTY
23	Locking Tie	5
24	Locking Tie (with tie-mount)	2
25	M8 x 25 Bolt	1
26	M8 x 30 Bolt	1
27	M6 x 12 Bolt	1
28	M6 x 25 Bolt	3
29	M14 Spring Washer	1
30	Solenoid wiring harness (short)	1



Battery Activation

Activate battery as per manufacturer's instructions.

* *Battery not included in kit

Vehicle Preparation:

XP Models-

Remove:

- Hood
- Side panels
- Bottom pan cover

XS/XM models-

Remove:

- Side panels
- Upper body module
- Bottom pan cover

ETEC XP 2009-13 Models:

Primary Air Intake Silencer Removal

Connector Tube:

- Lift tab on the rear of connector tube to unlock.
- Twist tube counter clockwise and pull tube forward to remove.

Primary Air Intake:

- Push securing tab and remove silencer from adapter plate.

All Models:

1. Drive Pulley/Exhaust:

- a. Remove belt guard.
- b. Use Drive pulley holder to keep sliding sheave static while removing drive pulley bolt.
- c. Discard conical spring washer.
- d. Use SM-12560 Clutch Puller to remove drive pulley and belt.
NOTE: ETEC models only – remove Exhaust Gas Temperature Sensor.
- e. Remove Exhaust Pipe & Muffler.

2. Starter Motor Install:

- a. Remove and discard LH front engine support M8 bolt.
- b. Remove and discard LH rear engine support M8 bolt.
- c. The engine stopper is located below the LH front motor mount and opening for starter motor gear. Remove and discard the 3 M6 bolts from the stopper.
- d. Bring starter motor to its position making sure the electrical post is front facing on the vehicle, and loosely install the first bolt on shaft side of starter (Item #2).
NOTE: 600 ETEC models only, install spacer (Item #5) between engine and 2nd bolt hole on starter motor electrical post side.
- e. Using M8 bolt and washer (Item #3 & Item #4) with washer between bolt head and starter, loosely install.
- f. Install M8 bolt (Item #2) to the 3rd mount on the starter motor. This is the lower bolt hole on the shaft side of starter motor. You may need to move the engine around in order to align bolt holes. Do so by prying upwards on the engine crankcase bolt head. Be careful when prying and only lift the engine enough to loosely install the final starter motor bolt.
- g. Tighten shaft side bolts first, starting with the top one. Then tighten the electrical post side bolt last. Torque Specs: 28.5 Nm – 21 ft lbs.
- h. Reinstall engine stopper with 3 M6 bolts (Item #28). Torque Specs: 10 Nm – 18 in lbs.
- i. Reinstall motor mounts reusing original washers. Loctite is recommended on both bolts, (Item #25) for the rear, (Item # 26) for the front. Torque Specs: 24.5 Nm – 18 ft lbs.

3. Cable Installation:

- a. Connect starter cable (Item #6) to electric post on starter motor. Use Washer (Item # 8) and Nut (Item #7). Tighten cable nut so that cable is at a 35 degree angle heading away from engine. See last page for reference picture. Torque Specs: 7.5 Nm – 66 in lbs.
- b. Route starter cable towards the battery behind oil tank and secure with locking ties. Be sure any wires will not interfere with any moving, sharp, or heated objects.

4. Battery & Solenoid

- a. There is a ground wire located above the RH footrest in the engine bay. Remove the M6 bolt and washer and keep for later use.
- b. Position the battery support (Item #9) above the footrest.
- c. Install the battery cable (Item #17) to the upper left bolt hole on the footrest using lock washer (Item # 18) and M6 bolt (Item #11), and upper right hole with just an M6 bolt (Item #11).
- d. Reinstall the ground wire in the same location with the original hardware, making sure the washer is against the battery support.
- e. Tighten all bolts above to the following specs. Torque Specs: 7 Nm – 62 in lbs.
- f. Install the battery with the negative post on bottom. Both posts will face the RH of vehicle.
- g. Install Starter Solenoid (Item #15) onto the Battery Bracket (Item #14) using M6 bolts (Item # 16) and nuts (Item # 10).
- h. Install Battery Bracket to Battery Support using 2 M6 bolts, (Item # 16) (Item #27). Torque Specs: 7.5 Nm – 66 in lbs.
- i. Connect Starter Cable to RH post of solenoid when looking at plug side. Torque Specs: 4 Nm – 35 in lbs

NOTE: 600 ETEC models only, there may be some interference from the temp sensor when installing the next terminal to the solenoid. You should be able to bend the terminal slightly (20-40 degrees) for proper fitment.

5. **All ETEC Models:**

- a. Add a cap (Item #22) to each end of the red battery cable (Item # 19).
- b. Feed fuse wire (Item #20) eyelet through the cap on the angled battery cable end.
- c. Connect battery cable and fuse wire to positive post. Fuse wire should be under cable end. Torque Specs: 3.25 Nm – 29 in lbs.
- d. Connect other end of battery cable to the other post on the solenoid. Torque Specs: 4 Nm – 35 in lbs.
- e. Cover terminals with caps.
- f. Insert the fuse wire into the free fuse holder on vehicle.
- g. Recover 30 A fuse from the solenoid wiring harness (Item #21) and insert into free space above solenoid.
- h. Cut locking ties that hold solenoid control wires to harness.

5. **2009-2012 ETEC Models:**

- i. Connect the wires of solenoid wiring harness (Item #30) to the 1-pin vehicle solenoid control wires (shrink tubes are recommended).
- j. Clip solenoid wiring harness to solenoid, making sure nothing touches the solenoid posts. Use zip ties where necessary.

5. **2013+ ETEC Models:**

- k. Plug 2-pin connector of solenoid wiring harness (Item #21) to solenoid.

5. **PTEK**

- a. Cut zip tie of solenoid control wires to free it from the harness.
- b. Plug solenoid wiring harness (Item #21) to vehicle harness connector.
- c. Attach solenoid wiring harness (Item #21) to the oil tank tie mount. You should replicate the same style as the harness that was removed from here (loop harness and zip-tie to tab on bottom of oil tank). Be sure that the tie is on the protected parts of the harness, not wire.
- d. Mount fuse holders from solenoid wiring harness to battery strip.
- e. Add caps (Item # 22) onto red battery cable (Item # 19).
- f. Feed solenoid wiring harness (Item #21) eyelet through the cap on the straight battery cable end.
- g. Connect battery cable and eyelet to solenoid post. Tighten with Nut (Item #7) and cover with cap. Torque Specs: 4 Nm – 35 in lbs.
- h. Connect other end of battery cable to the positive post on the battery and cover with cap. Torque Specs: 3.25 Nm – 29 in lbs.
- i. Connect 2-pin plug of solenoid wiring harness to solenoid.

6. **Starting Relay Jumper Removal**

ETEC XP 2009-2013 Models Only:

- a. This is located on the side of the oil tank. Disconnect using a needle nose pliers, then fold back and secure it to harness so it is out of the way.

7. **Starting Relay Install**

ETEC XP 2009-2013 Models Only:

- a. Recover relay from solenoid wiring harness (Item #21).
- b. Connect it to the unused connector on vehicle main harness and secure it to the oil tank with a zip tie.

8. Finalization

- c. Connect Black battery cable to the negative side. Torque Specs: 3.25 Nm – 29 in lbs.
- d. Reinstall other items you have removed based on owner's manual instruction.
- e. Clean pulley sheaves and shaft with fine steel wool and dry cloth.
- f. Specialized cleaner recommended for crankshaft end and inside of drive pulley prior to reinstallation.
- g. Install new spring washer (Item #29) positioning the domed side against drive pulley bolt.
- h. Tighten drive bolt on clutch sheave. Torque Specs: 120 Nm – 89 ft lbs.
- i. See owner's manual for more details; while rear of vehicle is securely lifted, accelerate up to 19 MPH and apply brake. Repeat this 5 times.
- j. Re-torque drive pulley bolt. Torque Specs: 120 Nm – 89 ft lbs.
- k. See owner's manual for more details, after 10 hours of operation, the torque specs should be re-checked.
- l. Reinstall remaining removed parts. Loctite is recommended on stainless hardware.

The reverse button on your vehicle will now function as a push start when the vehicle is off.

In reference to Step 3a:

