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Ski■Doo Summit 850

QRS Secondary & pDrive Primary Clutch Service

Tools & Supplies

- QRS spring compression tool (Ski-Doo specific)
- Torx T-27 driver/bit (helix screws)
- Metric sockets/ratchet
- Torque wrenches (in-lb and ft-lb)
- Ski-Doo pDrive primary clutch puller (if removal needed)
- Clutch holding tool / weight installation tool (for pDrive)
- Brake cleaner / solvent
- Blue Loctite (medium) & Red Loctite (high strength)
- Small propane torch or heat gun
- Safety glasses, gloves

Safety

- Always work on a cool engine.
- Remove tether cord and disconnect battery if e-start.
- Wear protective eyewear—clutch springs are under heavy tension.
- Secure sled on a lift or stand.

Step 1 — Remove Secondary Clutch

- Remove side panels, belt guard, and belt.
- Remove exhaust or interfering parts if necessary.
- Remove secondary clutch from the jackshaft.

Step 2 — Compress Secondary

• Use a QRS spring compression tool to compress the clutch evenly.

• This safely relieves pressure on the helix screws and rollers.

Step 3 — Helix Replacement

• With spring compressed, heat each T-27 helix screw for ~1 minute.

• Seat Torx bit firmly with a hammer tap, then loosen with steady downward pressure.

• Clean screw threads and helix mounting surfaces.

• Apply red Loctite to screws and reinstall helix.

• Torque QRS helix screws to 23 ft-lbs.

Step 4 — Secondary Spring Replacement

• If changing spring, replace while clutch is still compressed.

• Confirm spring is seated correctly before releasing compression tool.

Step 5 — Roller Replacement

• Remove retaining pin/clip from each roller stud.

• Withdraw stud, remove roller and washers.

• Clean/polish stud and verify roller spins freely.

• Install new roller with correct orientation (check kit instructions).

• Reinstall stud, washers, and lock features.

• Torque roller stud bolts/nuts to spec (insert if available).

Step 6 — Primary (pDrive) Weight Replacement

• Remove belt to access the primary clutch. The clutch may remain on the crankshaft if clearance allows.

• Rotate clutch until weight pins are accessible. Use the pDrive clutch holding tool or carefully hold the clutch to prevent rotation.

• Remove the weight retaining bolt and washer with the correct driver.

• Withdraw the old weight and note orientation.

• Install new adjustable weight(s) per kit instructions.

• Ensure pivot bushings and spacers are in correct order.

• Apply a small amount of blue Loctite to the weight retaining screw threads.

• Reinstall retaining screw and torque to spec (insert if available).

• Repeat for remaining weights, rotating the clutch as needed.

• Double-check that each weight moves freely on its pin without binding.

Step 7 — Reassembly

• Slowly release compression tool from secondary, ensuring all parts seat properly.

• Reinstall secondary on jackshaft and torque retaining bolt.

• Reinstall primary clutch (if removed).

• Torque primary clutch bolt to 85 ft-lbs — no Loctite required.

• Reinstall belt, panels, and guards.

• Rotate clutches by hand to ensure smooth operation.

Calibration & Final Notes

• Engagement: ~3000–3200 RPM.

• Deep-snow WOT: ~7900–8000 RPM.

• Adjust weights as needed for proper RPM control.

■ We emphasize: Always use the correct Ski-Doo clutch tools (QRS spring compressor, pDrive holding tool, pullers) when servicing clutches. Attempting removal without the proper tools can cause damage or injury.