

Installation Instructions For TEAM® TIED Roller-type Driven Snowmobile Clutch

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Tools Required:

- Wrench (for installation/removal of secondary clutch retaining bolt)
- Venom Products Spring Compression Tool #930001, or equivalent tool.
- External Retaining Ring Pliers
- Clutch Alignment Tool (see brand-specific instructions that follow for appropriate tool part number)

Recommended/Optional Tools:

- 1/2" Wrench
- 1/8" Hex Wrench
- Hex Wrench (#26571 supplied in kit)
- Torx T-27 Driver
- Low-temp Grease

Installation, Adjustment and Removal Procedures:

Remove drive belt and existing driven clutch from jackshaft. Keep the spacers, retaining bolt, washers, and key, if applicable, for re-use later (unless otherwise stated in the brand-specific instructions that follow).

TEAM® Clutch Installation On Jackshaft:

It is recommended that you lubricate the exposed jackshaft with a light coating of low-temperature grease prior to clutch installation. This will prevent surface corrosion on the jackshaft and make future removal easier.

Each manufacturer uses a different interface between the clutch and jackshaft. Some use a spline while others use keys. Make sure to use the proper sized key for your model and year of machine (included in kit). Do not attempt to use a key that is smaller than the key-way, or component damage may result.

Brand-specific Instructions:

Ski-Doo:

1. Remove the stock clutch and large concave spacer (on 2003 and newer models).
2. Install .090 shims OR three (3) .030" shims - this is average reference, on jackshaft.
3. Install TEAM® TIED clutch (Part #421515) and supplied retaining bolt.
4. Torque the driven clutch retaining bolt to manufacturer's specifications (see your Owner's Manual).

5. Check clutch alignment with appropriate Venom Products alignment bar (Part #930721 for 2003 and newer REV Chassis models and Part #930720 for MXZ ZX and Summit Chassis models).

1. MXZ ZX and Summit Chassis models generally require only two shims .030 thick with none of the stock shims removed.

***For Mach Z 1000 and RT 1000 Summit models we have added two button head screws to the installation kit. These replace the two factory screws that hold the jackshaft bearing cover together. Once the secondary clutch is removed, take out the two screws on the bearing cover (see photo). Apply 2 or 3 drops of red Loctite to the new screws and install them with a 5 mm Allen wrench.**



Remove these two bolts. Replace with the two button head screws included in kit.

Arctic Cat – ProCross/ProClimb (2012-2015):

1. Remove stock secondary clutch and rubber O-ring.
2. Install .150" shim (or five (5) .030" shims) on jackshaft.
3. Install TEAM® TIED clutch (1" Keyed Part #421438 – for Arctic Cat models 2005 and older without Diamond Drive).
4. Install the .250"x .154" key included in your kit into the key-way in the center post of the clutch.
5. Rotate the clutch on the jackshaft until the key drops into the key-way on the jackshaft. Install spacer(s) and retaining bolt supplied in your kit.
6. Torque the driven clutch retaining bolt to manufacturer's specifications (see your Owner's Manual).
7. Check clutch alignment with appropriate **Venom Products alignment bar** (Part #930721 for ProCross/ProClimb and Part #930720 for 2005 and older).



Polaris:

1. Remove stock secondary clutch.
2. Install TEAM® TIED clutch (splined - Part #421511, 1" keyed – Part #421438).
3. Install the .250"x.1875" key included in your kit into the key-way in the center post of the clutch.
4. Rotate the clutch on the jackshaft until the key drops into the key-way on the jackshaft. Install spacer(s) and retaining bolt supplied in your kit.
5. Torque the driven clutch retaining bolt to manufacturer's specifications (see your Owner's Manual).
6. Check clutch alignment with appropriate **Venom Products alignment bar** (Part #930721).

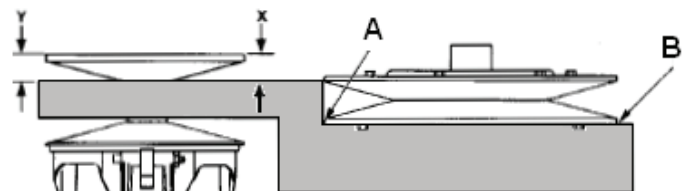
Yamaha:

1. Remove stock clutch, and hollow aluminum spacer.
2. Place the six (6) gold washers on jackshaft (supplied in kit). Install new TEAM® TIED clutch (Part #421512) on the shaft and slide OEM aluminum spacer in the clutch shaft. Thread stock clutch bolt into shaft and torque to OEM specs. There should be about .040-.060 side-to-side play once the clutch bolt is torqued to spec. (Check manufacturers book for correct specifications)
4. Check clutch alignment with appropriate **Venom Products alignment bar** (Part #930720).

Checking Offset:

If premature belt wear is experienced, the clutch is likely offset and parallelism must be checked. To check this, use the **Venom Products alignment bar** specified for your sled (see brand-specific instructions above for correct part number) and follow instructions below.

1. Open clutch guard and remove the belt.
2. Place the clutch alignment bar between the drive clutch sheaves and against the outside edge of the TEAM® driven stationary sheave.
3. Allow alignment bar to rest on the drive clutch shaft.
4. With the bar flush at points A and B, the front portion of the bar should just clear the inside edge of the stationary sheave or be within .030 with the bar resting on the stationary shaft.



Checking Parallelism:

Using the **alignment bar**, a **caliper** and a **machinist's scale**, take a measurement from the back side of the bar at points X and Y (see illustration on page 2). These measurements should be equal, or Y must not exceed X by more than .060".

DO NOT add grease or lubrication inside the roller/spider area. It is designed to operate clean and dry.



Belt Installation:

1. Thread the **belt installation tool** (Part #650343) provided in your kit, into the open hole next to the belt width adjuster bolt.

2. Thread the tool into the hole until the sheaves separate enough to install the drive belt.

• Note: If belt is low in the secondary, rotate the clutch counter-clockwise until the belt rises up in the clutch. Further adjustments will be covered in next step.



Belt Width Adjustment:

The sheave faces can be adjusted slightly to allow for belt width or length tolerances. See your snowmobile Owner's Manual for more details on this procedure.

1. To adjust the sheaves, loosen the 1/2" jam nut on the belt width adjuster.
2. Using a **5/32" hex wrench**, adjust the threaded set screw as needed.
3. Turn the set screw in (clockwise) to increase the distance between the sheaves and out (counter clockwise) to decrease the distance.
4. Tighten the jam nut after the belt adjustment is made.



Rapid Reaction Secondary Clutch Tuning:

Twin Trax™ Helix Change Or Adjustment:

The driven clutch assembly must be removed from the snowmobile before changing the Twin Trax helix.

1. To change cams, remove the Torx (T-27) screws that retain the cam to the moveable sheave.
2. Pull the cam straight out or turn the sheaves relative to each other to twist the cam out.

• If the cam is hard to remove, place the clutch assembly on a flat surface with the cam side facing down. Press down on the moveable sheave belt face with both hands and the cam will release.

3. Select the Twin Trax angle you want to run and align that pair of cuts with the "X" stamped on the spider.

4. Slide the cam down over the rollers, install the screws, and tighten.

• When the cam is removed, the moveable sheave may be misaligned with the stationary sheave. If the cam is hard to install, make sure the sheaves are aligned by rocking the moveable sheave while pressing on the cam.



Spring Change:

The driven clutch assembly must be removed from the snowmobile and the cam removed from the clutch before changing springs (see right). The spider and roller assembly must be removed in order to do so.



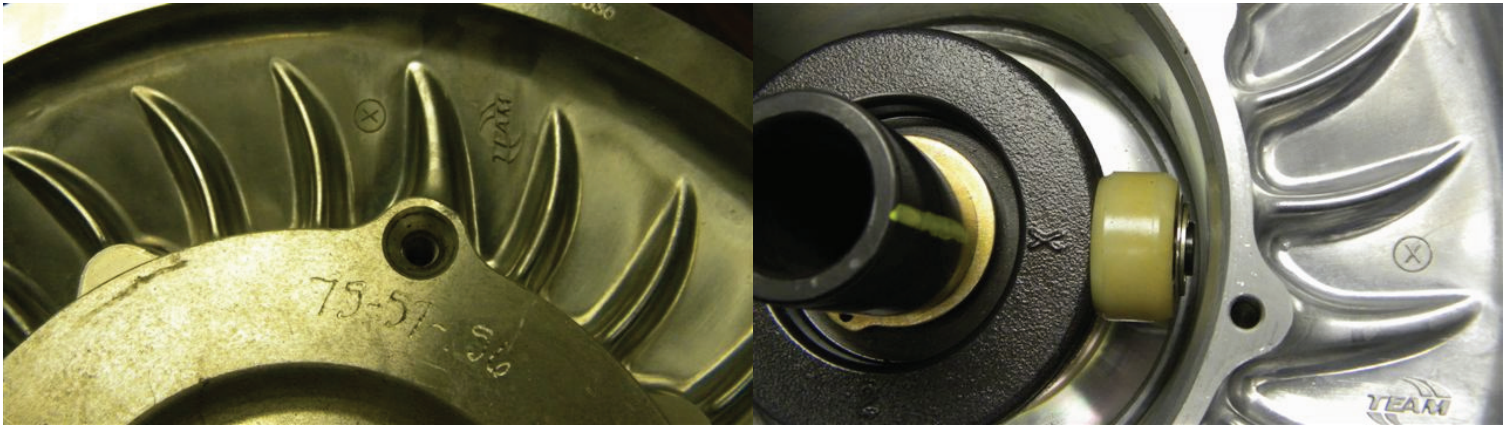
1. The spring force is retained by the spider/roller assembly and the large retaining ring. You must take the force off the spider and remove the retaining ring. Springs with a relatively large preload require a **Venom Products Spring Compression Tool** (Part #930001).

2. After the spring has been safely compressed, the retaining ring can be removed using standard **external retaining ring pliers**. Be careful to avoid damaging the steel post while removing the retaining ring.

3. Installation is done in the reverse order: Install the desired rate spring, place the spider/roller assembly on top, compress the spring using a **spring compression tool**, align the splines for the last ½" of compression and install the retaining ring.

- Note: The splines have a "skip tooth" that must be aligned during installation. **Do not try to force the parts together if they are not aligned properly!** Find the skip tooth on the clutch post and make a line from the tooth to the top of the post for easier installation.

- Also note that the moveable sheave and the spider have an alignment mark on them. Care must be taken to keep these marks aligned with each other in order to preserve the balance of the assembly.



4. Make sure the retaining ring is fully seated in the groove before releasing the spring force.

5. Install a Twin Trax helix and replace the clutch assembly on the vehicle. Tighten cam-retaining bolts to 8-12 ft lbs.

