Starting Line Products, Inc.

015-M8501

"Setting the World's Performance Standards"

AW 7/7/21 JM

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Clutching for 2021-23 Polaris 850 Matryx Indy, XC, Switchback Assault, XCR and VR1 Stock or with SLP Stage 1 or SLP Stage 1.5

Important: The following clutching information has been thoroughly tested and is highly recommended for proper performance and reliability. Primary weights, drive spring and driven spring must be changed according to the chart if applicable for your elevation. Running any combination other than recommended may cause poor, inconsistent performance.

Altitude (feet)	**Drive Clutch**		**Driven Clutch**	
	Clutch Spring	Shift Weight	Clutch Spring	Driven Helix
0-3000'	Blue/ Silver SLP# 40-69	Magnum Force Weights SLP# 40-164 (69g) 3 Set Screws 1 Lock Set	Black (Stock)	58-44.36 ER (stock)
3-6000'	Blue/ Silver SLP# 40-69	Magnum Force Weights SLP# 40-164 (69g) 1 Set Screws 1 Lock Set	Black (Stock)	58-44.36 ER (stock)
6-8000'	Blue/ Pink SLP# 40-76	Magnum Force Weights SLP# 40-151 (65g) 1 Set Screws 1 Lock Set	Black / Purple (SLP #50-55)	56-42.36 ER (50-154)

Running RPM:8150-8250

Note: Test Sled was a 2021 Polaris Matryx XC VR1

Clutch Kit Installation Instructions for Polaris Snowmobiles with TEAM Clutches

Clutch Removal

A-1: Lock the park brake.

A-2: Removal the left side pannel.

Note: Do not remove belt until the Primary Clutch has been removed.

A-3: Remove primary clutch retaining bolt. A clutch holding tool (SLP #20-202) is recommended to hold the primary clutch stationary.

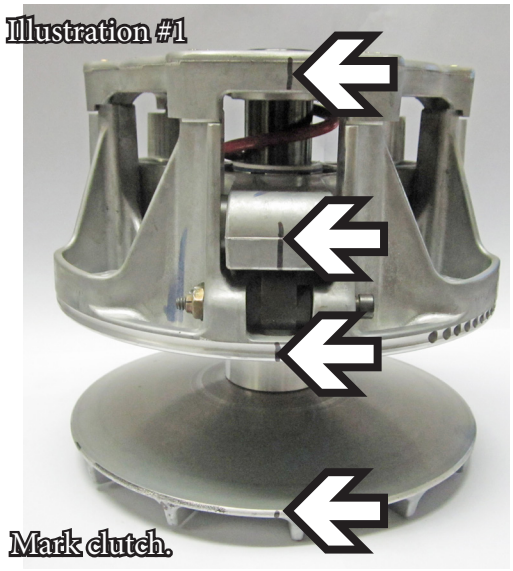
A-4: Thread the primary clutch puller (SLP #20-136) into the center of the primary clutch. Hold the primary clutch using a clutch holding tool (SLP #20-202) and tighten the clutch puller with a breaker bar until the clutch disengages from the tapered shaft. Remove clutch from sled and remove clutch puller from clutch.
Hint: A small amount of grease on the clutch puller threads and end that pushes on the crankshaft will help in the primary clutch removal process.

A-5: Mark drive belt direction of rotation. (Belt is normally positioned so that the part number can easily be read) Remove the belt from the sled.

A-6: Remove secondary clutch retaining bolt.

A-7: Slide secondary clutch off splined shaft and remove from the sled.

Primary Clutch Disassembly / Assembly



B-1: Mark the cap, spider, movable sheave and stationary sheave in relation to each other on the primary clutch. (Refer to illustration #1)

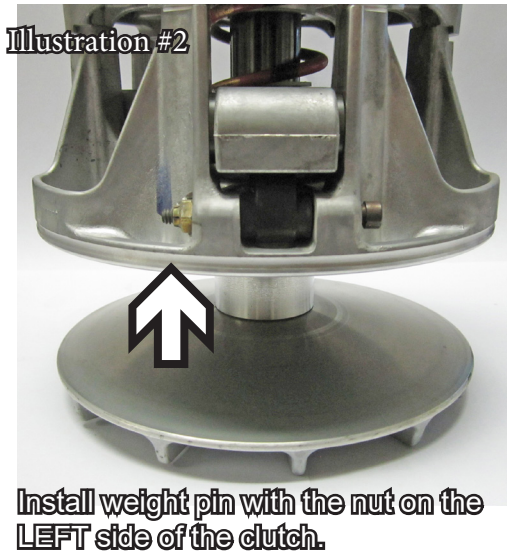
B-2: Compress with a clutch press tool (SLP #20-222) and loosen the six cap bolts until the cap can be removed from the clutch and set aside.

B-3: Remove stock primary spring. This spring will not be reused.

B-4: Remove pins holding weights in the primary clutch.

B-5: Remove weights from clutch. These stock weights will not be reused.

B-6: Check movement of cap and movable sheave for sticky spots which could be caused from a bad bushing. Check rollers visually and by feel to make sure they roll freely and do not show any wear. Check to make sure washers are in place on either side of rollers. Check the clutch sheaves for excessive wear and replace clutch if hairline cracks are found. Specialized clutch rebuild tools and replacement parts are available from SLP or clutches can be sent directly to SLP for clutch rebuild services. Inquire for more information.



B-7: Check weight pins for wear before installation. Pins should be straight and smooth from shouldered head to threads. If wear is found, discard pins and replace pins and lock nuts (SLP# 40-437).

B-8: Install Magnum Force weights into clutch and tighten weight pins with self-locking nuts and torque to **20 in/lbs (2 Nm)**. (Refer to illustration #2 for proper weight pin orientation)

B-9: Using the provided SLP setup sheet, install recommended tuning set screws into the Magnum Force weights. Make sure to screw each set screw all the way to the tip of the weight until it stops at the end of the threads. When installing set screws in the Magnum Force weights, always install a lock set after all recommended set screws are in place.

B-10: Install SLP primary spring.

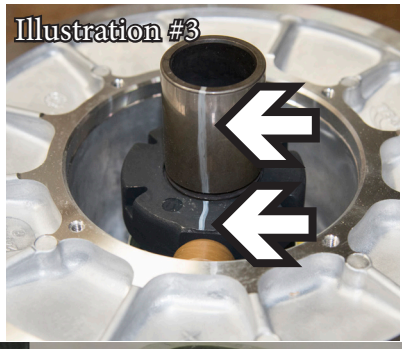
B-11: Line up marks made on Step B-1. Compress cap to movable sheave and start all six cap bolts. In a star pattern, tighten each bolt a little at a time until the cap is seated against the movable sheave of the clutch. Torque cap bolts evenly to **100 in/lbs. (12 Nm).**

Secondary Clutch Disassembly/Assembly

C-1: Remove four T25 torx head screws that hold helix into secondary clutch. Remove helix.

Spring Removal:

C-2: With the helix removed, draw a line across the roller hub and vertically up the center shaft. (refer to Illustrations #3 & #4)



C-3: Use the sping compression tool (SLP #20-222) to hold pressure down on the roller hub. Using a set of retaining ring pliers, unclip the c-clip holding the roller hub down.

C-4: Slowly decompress the compression tool and roller hub.

Note: A Delrin washer is recommended. If installing a delrin washer, place the washer under the gold colored spring cup (at very bottome between spring cup and clutch)

C-5: Install secondary spring. Using a spring compression tool (SLP #20-222), compress the spider and spring then reinstall the c-clip that was removed in C-3.

C-6: Before installing the helix, rotate the roller hub so that it lines up with the X on the driven clutch. Then install helix, make sure to line up the angle you are going to use on the helix with the inside rollers.

C-7: Re-install the four T25 torx head screws and torque to **8-12 ft/lbs (10.9-16.3 Nm).**

Clutch Installation

D-1: Use brake clean and a clean rag to clean the tapered shaft on the sled and the tapered mating surface of the primary clutch.

Important Note: Remove any glazing on the clutch sheaves using a red scotch bright pad. Clean the sheaves of both clutches with dish soap and hot water. Scrub the belt using dish soap and hot water. After washing, rinse belt and sheaves throughly with hot water. Let dry completely before installation.

D-2: Install primary clutch onto the tapered shaft of the sled. Hold the primary clutch using a clutch holding tool (SLP #20-202) and torque the primary clutch retaining bolt to **80 ft/lbs (130 Nm).** Once this is done, loosen the retaining bolt and torque the bolt once more to **80 ft/lbs (130 Nm).**

D-3: Install the secondary clutch on the splined shaft of the sled making sure the clutch is completely seated on the shaft. Torque the retaining bolt to **18 ft/lbs (54 Nm).**

Hint: Having the park brake on will help with aligning the splines.

D-4: Install the belt. (SLP recommends using the **OEM Polaris Belt** for proper operation)

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Recommended Tools

20-202

20-136

20-222

Tools Recommended by SLP for Clutch Kit Installation:

#20-222 Clutch Compression Tool
#20-136 Primary Clutch Puller
#20-202 Clutch Holding Tool

Important Tuning Note:

Due to the variance from one vehicle to another, the peak running RPM may vary. For example, one engine can be slightly stronger than another, rider weights vary, the vehicle weight can vary, track length, lug heigth, conditions it is used in, as well as altitude and temperature. Check your full throttle running RPM. When correct it, will be within the minimum and maximum RPM recommendation on these instructions. If RPM is too high it can be reduced by adding more weight to the cam arms and if RPM is too low, weight can be removed. The great feature of the adjustable weights is that you can tune them for the perfect RPM for your vehicle and rider to get the most performance from your sled.