015-09816

"Setting the World's Performance Standards"

743 East Iona Road, Idaho Falls, ID 83401, (208) 529-0244 Fax (208) 529-9000

Part# 09-816 SLP Twin Pipe Set for 2019-22 Polaris 850 Axys RMK (ALL models) and SKS (155" models)

Parts List

1 - Instruction (Part #015-09816)
1 - MAG Pipe (Part #090-8164)
1 - PTO Pipe (Part #090-8163)
1 - Silencer (Part #090-8161)
1 - Stinger Assembly (Part #090-8165)
1 - PTO Flange (Part #090-8167)
1 - MAG Flange (Part #090-8162)
1 - Pipe Support Bracket (Part #092-0526)
1 - Exhaust Flange Gasket (Part #090-969)
2 - Grafoil Seal (Part #090-621)
1 - Orange Silicone Damper (Part #090-1090)
3 - 6 x 1 x 16mm Flanged Bolt (Part #999-0264)
3 - 6 x 1mm Flanged Nylock Nut (Part #999-0263)
3 - 6 x 1 x 20mm Flanged Bolt (Part #999-0265)
1 - 8 x 1.25 x 20mm Bolt (Part #999-8242)
1 - 10 x 1.5 Metric Toplock Nut (Part #999-0266)
3 - Large Fender Washers (Part #999-7896)
1 - Large Head Rivet (Part #999-0048)
1 - 10-16 x 1/2" Self Tapping Screw (Part #999-0211)
4 - Silicone Filled Spring (Part #090-50)
1 - Spring Clip (Part #090-697)
2 - Thermo Sleeve (Part #09-38)
1 - 3" x 120" Reflective Heat Tape (Part #092-0529)
1 - Insulated Heat Tape (Part #090-29)
1 - Fusebox Bracket (Part #092-0506)
1 - Straight Cut Aluminum Spacer (Part #092-0525)
1 - Beveled Cut Aluminum Spacer
1 - Upper Heat Blanket (Part #092-0527)
1 - Lower Heat Blanket (Part #092-0528)
1 - Anti Seize Packet (Part #090-0146)
3 - Zip Ties (Part #999-5431)
1 - Stainless Steel Template for Servo Relocation (Part #092-0530)

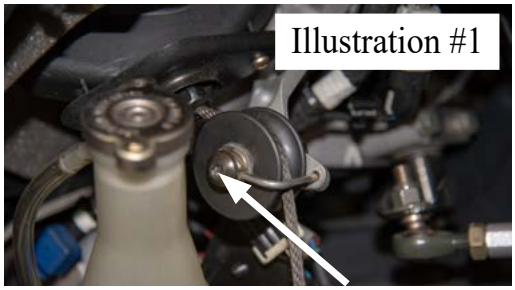
Recommended Tools List

T-30 Torx
T-40 Torx
8" Spring Hook Tool (Part #20-183)
17" Heavy Duty Spring Hook Tool (Part #20-322)
3/16" Drill Bit
1/4" Drill Bit
5/16" Screw Gun Bit for Drill
1/4" Ratchet
3/8" Ratchet
10mm Deep Socket
10mm Wrench
13mm Wrench
15mm Wrench
17mm Wrench
19mm Wrench
Side Cutters
6mm Ball End Allen - 5" Length (Part #20-221)
Dremel Tool with Plastic Rotary Cutting Bit
Drill
Torque Wrench
17mm Crow's Foot (for torquing EGT Sensor)

Scan the QR Code or visit https://youtu.be/8nWgoMzrK5o to watch a video of this installation process.

https://youtu.be/8nWgoMzrK5o

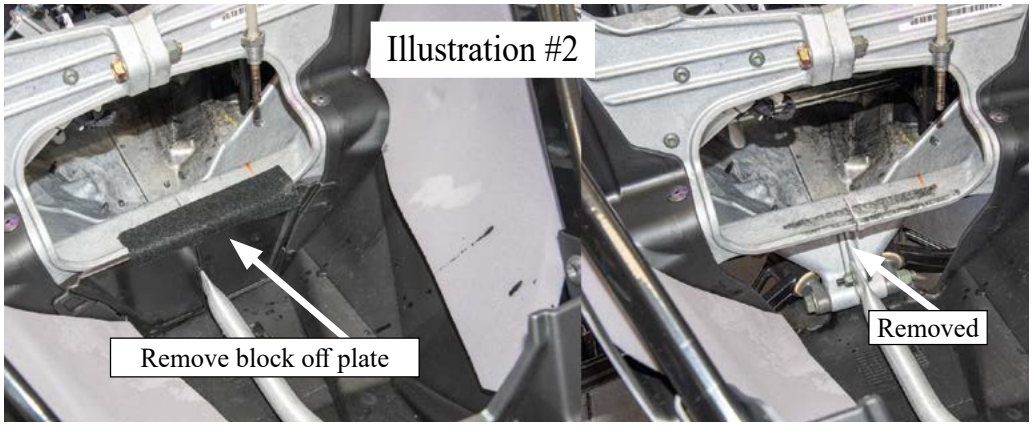
Step 1: Remove hood, side panels, stock pipe, silencer and spare belt holder. Once pipe set is removed, using a T40 torx and a 13mm wrench, remove the recoil roller. **<u>This will not be reinstalled.</u>** (See illustration #1)
NOTE: Make sure to leave stock rubber isolator on the bulk head support. (See illustration #8)



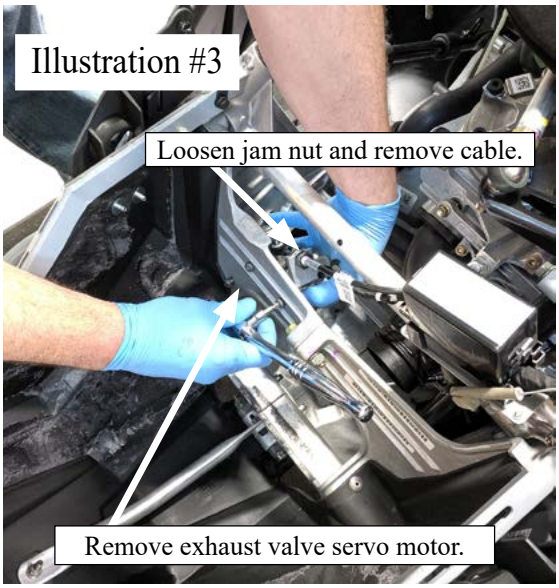
WARNING:
Failure to remove this pulley may cause the recoil rope to melt.

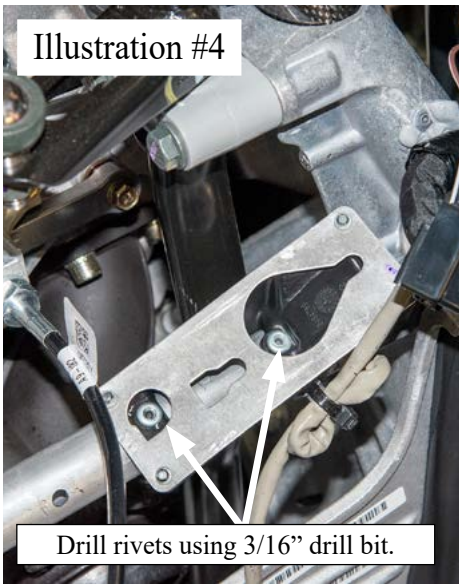
Step 2: Remove OEM nose cone block off plate by peeling up the fabric that is glued to the top edge of the bulkhead. Then lift block off plate out of the chassis, this will not be reinstalled. (See illustration #2)

Step 3: Loosen the jam nut on the exhaust valve servo motor cable and disconnect the cable from the servo motor. Then unbolt exhaust valve servo from the chassis using a T-30 torx bit. (See Illustration #3)
Note: To remove the wiring plug from the servo motor, pull the white safety clip out until it clicks once. Squeeze the white safety clip towards the wiring harness and lift the connector off to disconnect.



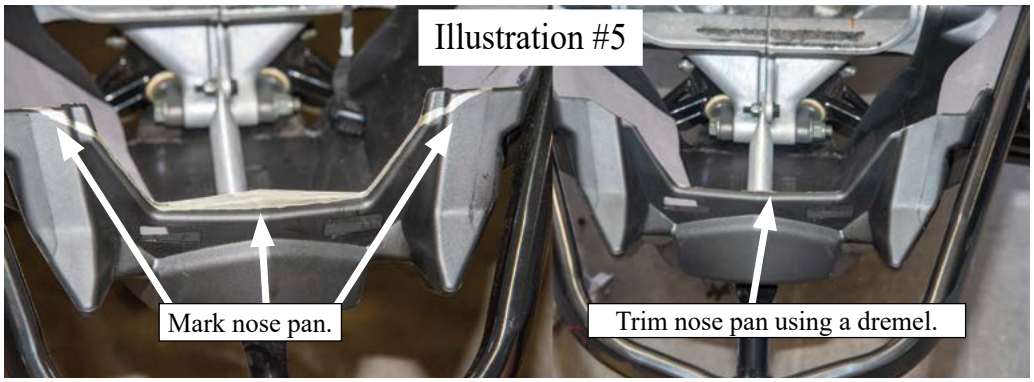
Step 4: Clip the two zip ties holding exhaust valve servo motor wires coming from fuse box. Remove the fuse box from fuse box bracket by lifting up on the black safety tab and sliding the fuse box towards the center of the sled. Remove the fuse box mounting bracket from the bulk head cross member by drilling out the rivets using a 3/16" drill bit. (Illustration #4). The stock fuse box mounting bracket will not be reinstalled.



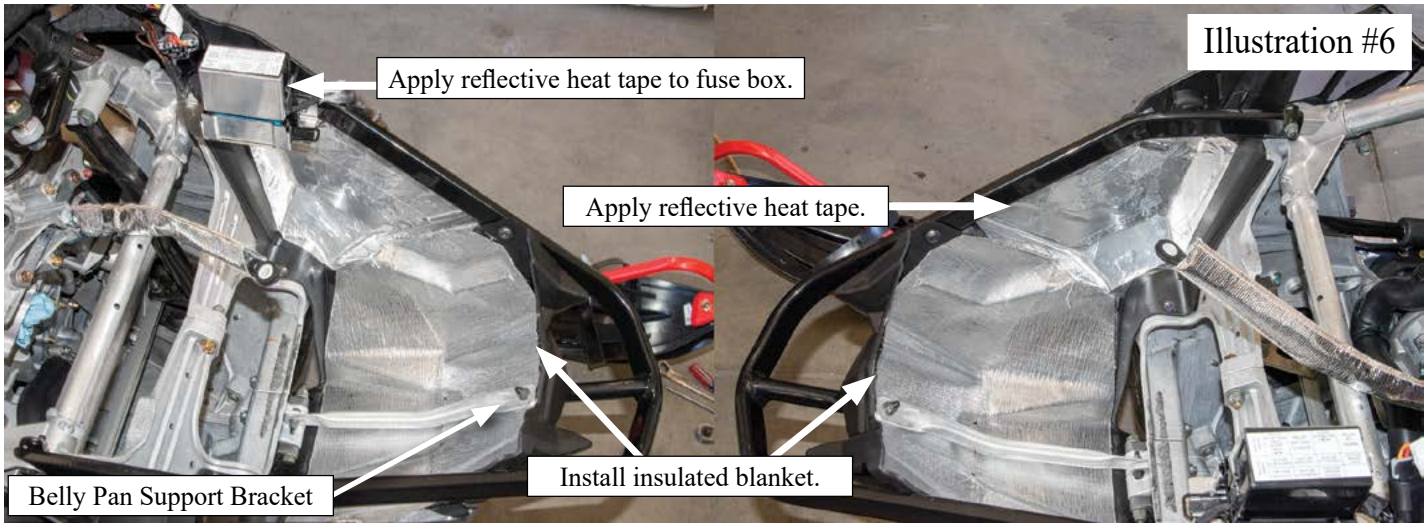


Step 5: Remove y-pipe by removing Allen bolts using 5" long 6mm ball end Allen wrench (SLP Part #20-221). Clean any residue left by the stock exhaust gasket.

Step 6: Mark the nose pan as shown in Illustration #5 using a silver marker. Then trim the marked area from the nose pan using a dremel tool with a plastic cutting bit (rotary bit). Debur as necessary.

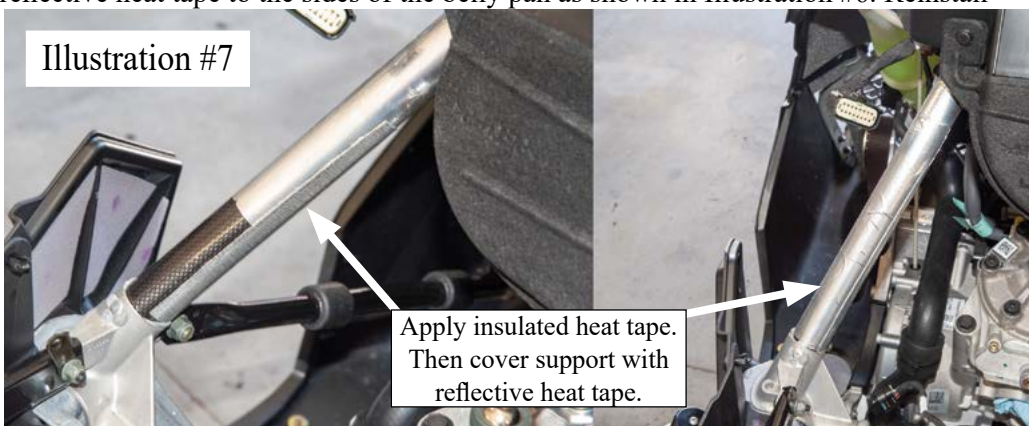


Step 7: Remove the foam from inside the belly pan. Remove the



front bolt from the belly pan support bracket and swing the bracket up towards the engine (see bracket in Illustration #6). Locate the insulated heat blankets in the parts kit. Dry fit blankets into place aligning it to the contour of the belly pan before pulling off the backer. Center the bottom blanket and mark its location using a marker. Remove the backer and apply to the belly pan working from the center out. Do the same with the upper blanket. The upper blanket will overlap the lower blanket slightly. Apply supplied reflective heat tape to the sides of the belly pan as shown in Illustration #6. Reinstall the belly pan support bracket.

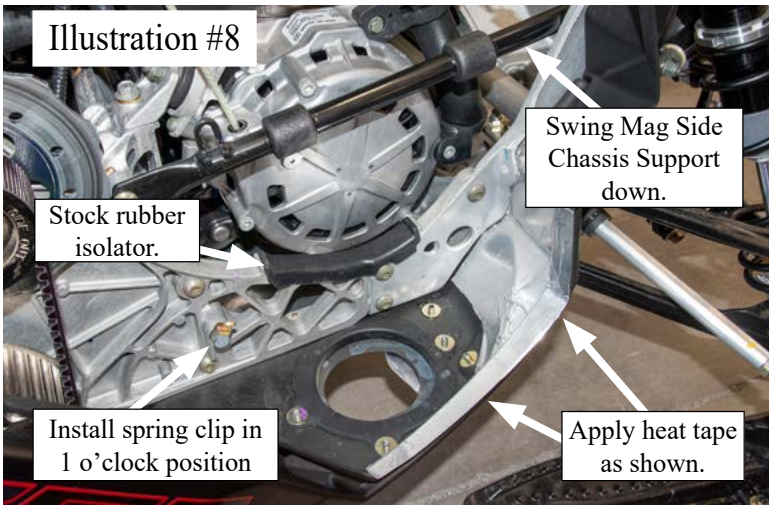
Step 8: Apply a strip of insulated heat tape on the MAG side of the upper bulk head support (overstructure). Then cover the support with reflective heat tape. (see Illustration #7)



Step 9: Apply heat tape near the exhaust outlet of the belly pan shown in Illustration #8.

Step 10: Install the provided spring clip in the 1 o'clock position using the provided 8 x 1.25 x 20mm bolt with a dab of blue thread locker on the threads. (Illustration #8)

Step 11: Using a T-40 Torx, remove the front bolt on the MAG side rear chassis support, and swing down but **DO NOT REMOVE.** (see support in Illustration #8)



Step 12: Unbolt the upper steering arm heim joint, then install the provided aluminum straight cut SLP spacer and provided locking nut (see Illustration #9). **Torque to 37 ft/lbs.**

Step 13: Remove the bolt on the back of the front bumper on the PTO side, where the brown wires are attached. Install provided SLP fuse box relocation bracket onto the rear inside of the front bumper, using the OEM bumper bolt and nut in the rear of the SLP fuse bracket. Then use the provided self tapping bolt in the front hole of the mounting bracket. Make sure the bracket is flush with the bottom edge of the bumper and the exhaust servo control wire is forward. (see Illustration #10)

Step 14: Heat tape fuse box side closest to the pipe (see illustration #10)

Step 15: Slip one provided heat sleeve over the exhaust valve control wire and the other provided heat sleeve over the exhaust valve servo cable.

Step 16: Using the provided stainless steel template, mark the hole on the bulkhead for relocating the exhaust valve servo. (see Illustration #11) Drill hole using a 1/4" drill bit.

Step 17: Remove servo motor from the servo mounting bracket. Install the provided beveled spacer (with the beveled edge towards the bulkhead) between the mounting bracket and the bulkhead using a 6 x 1 x 20mm flanged bolt (provided) coming from the engine side. Snug the bolt finger tight into the bracket.

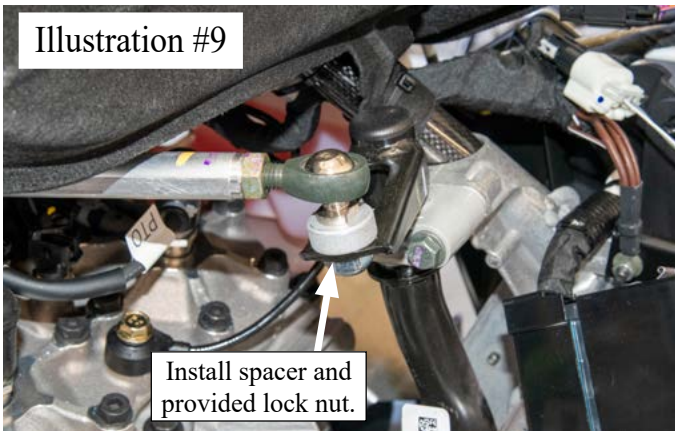
Rotate the bracket towards belly pan until the bottom of the bracket pushes against the belly pan and stops the rotation (with only light pressure applied). Mark the bottom hole location using a centering punch. Rotate the bracket out of the way to check the marked location. It should be approximately 0.350" from the belly pan transition line shown in Illustration #12. Drill marked hole using a 1/4" drill bit. Rotate the bracket back into place and install a 6 x 1 x 16mm flanged bolt (provided) finger tight from the outside of the belly pan. Mark the middle hole using a centering punch. Remove the servo motor bracket and drill the middle hole using a 1/4" drill bit.

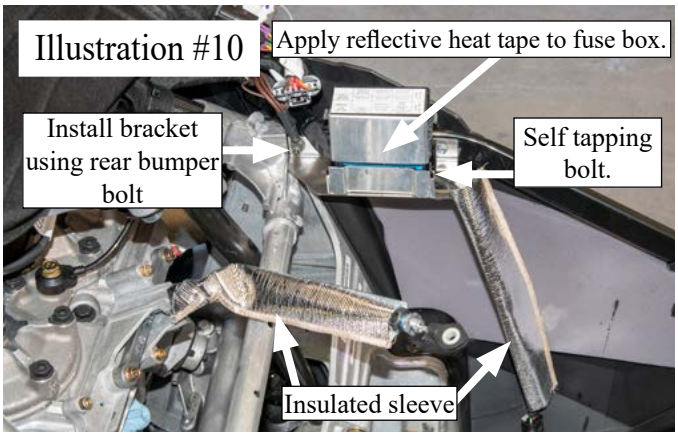
Reattach the servo motor to the servo motor bracket using the stock screws.

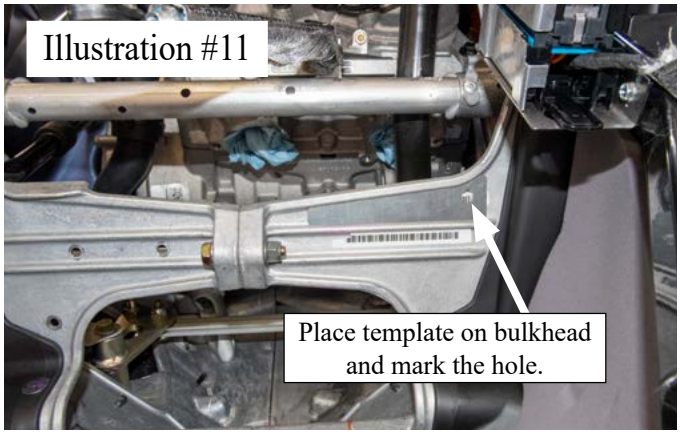
Attach the exhaust valve actuator cable to the servo motor.

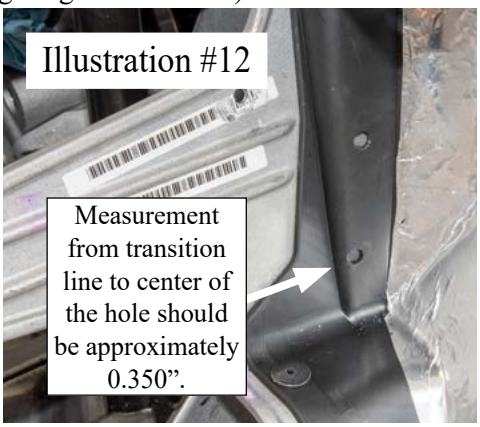
Reinstall the servo motor assembly in the new location beginning with the top hole (only finger tight at this time) and making sure to install with the beveled spacer between the bulkhead and the bracket (use blue Loctite on the threads).

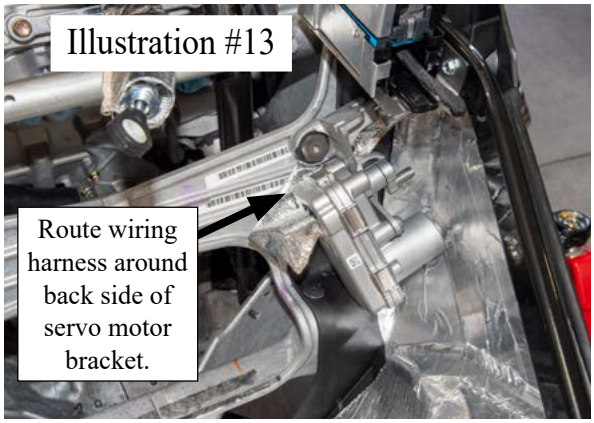
Route servo motor wiring harness around the back side of the servo motor bracket between the upper two holes (see Illustration #13). Plug the connector into the socket and lock into place by pushing the white clip towards the servo motor. Slide heat sleeve over the connector and zip tie into place. Apply blue Loctite to the threads of the middle and lower servo bracket bolts and install. Tighten all servo motor mounting bolts at this time.



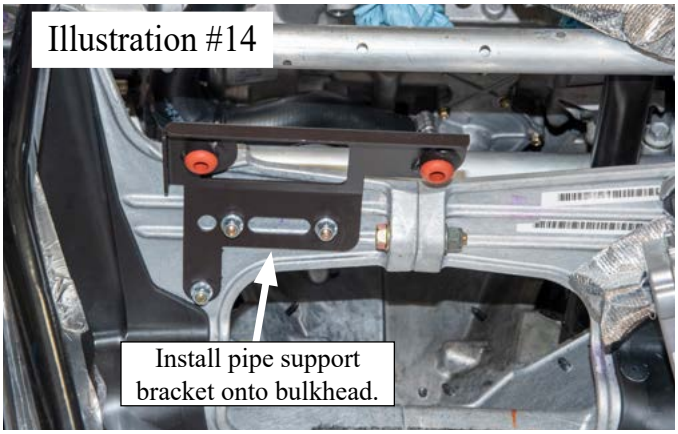








Step 18: Using the three holes that originally held the exhaust valve servo onto the bulk head, install the provided SLP pipe support bracket. Use two supplied 6 x 1 x 20mm bolts in the upper holes and one supplied 6 x 1 x 16mm bolt in the lower hole. They also use the supplied 6 x 1mm nylock nuts. (Illustration #14)
NOTE: If also installing an SLP Torque Arm do that now.



Step 19: Install the PTO side flange and gasket with the flange angling towards the MAG side (Illustration #15). **Torque bolts to 22 ft/lbs.**
Note: The PTO flange is the shorter flange that is angled. The V shaped support that is welded to the flange points down.

Step 20: Install the provided grafoil seal onto the PTO flange. Route the EGT sensor behind the fuse box. Set the PTO pipe into the chassis but do not connect it to the flange. Install EGT sensor into the pipe using anti-seize on the threads of the sensor and **torque to 22 ft/lbs**, then install the PTO pipe. Make sure the pipe stud slides into the pipe support bracket. (Illustration #16)
NOTE: Apply WD-40 or similar lubricant to the pipe stud prior to inserting into the pipe support bracket.

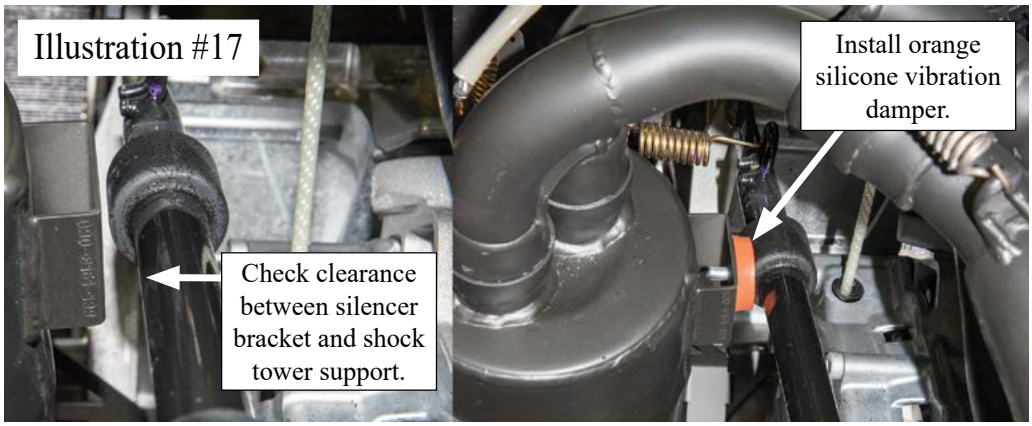
Step 21: Spring the PTO pipe into place using the provided SLP silicone filled springs.
NOTE: When springing the PTO pipe in place, come in through the PTO side below the clutch cover. Use SLP heavy duty long spring hook tool (Part #20-322).

Step 22: Install the MAG side flange pointing forward. Then install the MAG side pipe. Make sure the pipe stud slides into the pipe support bracket. The MAG flange is the longer, straight flange. The V shaped support that is welded to the flange points down.
NOTE: Apply WD-40 or similar lubricant to the pipe stud prior to inserting into the pipe support bracket.

Step 23: Spring the MAG pipe into place using the provided SLP silicone filled springs.

Step 24: Reinstall the rear chassis support bracket unbolted in step 11.

Step 25: Once both pipes are installed, test fit the silencer and stinger assembly in place. Check the clearance between the silencer bracket and the rear shock tower support member (see Illustration #17). Due to chassis variation, this distance varies.



Most sleds will only need the supplied orange silicone vibration damper installed to take up this space, but some will need one, two or three fender washers behind the orange damper for proper fitment. Rivet the orange damper with any necessary fender washers behind it onto the silencer bracket using supplied large head rivet.

Step 26: Install the silencer and spring into place using the OEM gold colored short spring to the lower spring clip and OEM medium spring to hold the upper portion of the silencer in place.

Step 27: Install silencer EGT sensor using provided anti-seize on the threads of the sensor and **torque to 22 ft/lbs**. The OEM zip tie holding the sensor wire in place will have to be removed and the sensor wire needs routed to the front side of the coolant bottle. Zip tie the wire to the coolant bottle after the sensor has been torqued in place (see Illustration #18).

Step 28: Install the stinger assembly into the pipe and silencer. Make sure to use Ultra Black High Temp. Silicone between all ball and socket joints. Use two silver colored OEM springs between the pipe and stinger assembly and two gold colored OEM springs between the silencer and the stinger assembly.

Step 29: Zip tie gauge/dash wiring harness back into place using zip tie provided.

Step 30: Check for clearance between MAG pipe and MAG side over-structure. There should be at least 1/4" of clearance. Check for clearance between the PTO pipe and the exhaust valve cable. There should be at least 1/4" of clearance. Turn the handlebars fully in each direction and check clearance between the PTO pipe and the upper steering arm heim joint retaining nut. There should at least 1/8" clearance.

Step 31: Start the sled and check for exhaust leaks.

Step 32: Remove foam from front center underside panel of the hood. Cover this area with reflective heat tape provided (see Illustration #19).

Step 33: Using SLP Reflash Box part #70-800, connect to diagnostic port in the wiring harness (located on the PTO side above the clutch cover) and reflash ECU to SLP Twin Pipe map.

Step 34: Reclutch to SLP clutching recommendations (see page 8).

Step 35: Reinstall hood and side panels.

850 Axys RMK & SKS (155”) with SLP Twin Pipe Kit

Requirements:

Fuel Requirements:

Stock Head
All Elevations: 91 Octane pump fuel with 1/2 oz of Lucas Octane Booster per gallon of fuel.

SLP Power Dome Heads
0-4000’: 1 gallon of aviation or race fuel per 4 gallons of 91 octane pump fuel.
4000’ and Above: 91 octane pump fuel with 1 oz of Lucas Octane Booster per gallon of fuel.

ECU Reflash - This flash is done using SLP Flash Tuner Part #70-800.

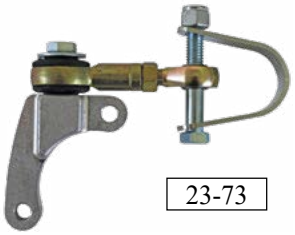
SLP Clutch Kit - Part #41-440 for elevations 0-3000’, Part #41-441 for elevations 3-6000’, Part #41-442 for elevations 6-10,000’ or Part #41-443 for 10-12,000’

Highly Recommended Parts:

SLP Intake Kit (Part #14-327)

SLP Torque Arm (Part #23-73)

SLP Hot Air Elimination Kits:
Left Side (Part #32-634)
Right Side (Part #32-631)



Caring for your ceramic coated pipes and/or silencer:

Ceramic Coating is applied to your exhaust system to provide a thermal barrier for more consistent performance. It is a coating which requires little maintenance to keep your pipes and/or silencer looking like new.

Upon completion of new installation, wipe the ceramic coated parts of the exhaust system down with water and a mild detergent. This will prevent oils and grease (usually in the form of fingerprints) from burning on and staining the exhaust during first initial startup.

To maintain your ceramic coated system, wash it with soap and water periodically (especially necessary after trailering it to and from your riding area on roads that have been treated with salt and other ice removing chemicals). Salt and other ice removing chemicals will attack and eat away at the ceramic coating. This will result in rust coming through the coating. Typically you will notice this rusting after your snowmobile has set for a period of time without the exhaust system being brought up to running temperature. Also, properly ventilate trailer while sled is drying out.

Failure to maintain your ceramic coated pipes or silencer can result in damage to the ceramic coating for which there is no warranty coverage. A little care will insure that your pipes and/or silencer will continue looking like new for many years.

IMPORTANT:
When transporting snowmobile in an open environment (ie. open trailer or on a sled deck) SLP highly recommends covering the snowmobile. This will help keep road salt and other ice removing chemicals off of the pipe as it can attack and eat away at the coating.

Clutching for 2019-21 Polaris 850 Axys RMK & SKS (155") with SLP Twin Pipe Kit

Important: The following clutching information has been thoroughly tested and is highly recommended for proper performance and reliability. Primary weights, drive spring, driven spring and helix 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 2019-20		Driven Clutch 2021-22	
	Spring	Clutch Weights	Spring	Helix	Spring	Helix
0-3000'	SLP Blue Silver 140/300 #40-69	SLP# 40-151 (65g) 4 Set Screws 1 Lock Set	Black 155/222 (Stock)	64-42.36 SLP #50-149	Black 155/222 (Stock)	64-42.36 SLP #50-151
3-6000'	SLP Blue / Pink 140/340 #40-76	SLP# 40-150 (60.7g) 4 Set Screws 1 Lock Set	Black / Purple 160/240 SLP #50-55	62-42.36 SLP #50-148	Black / Purple 160/240 SLP #50-55	62-42.36 SLP #50-152
6-8000'	SLP Blue / Pink 140/340 #40-76	SLP Part# 40-150 (60.7g) 3 Set Screws 1 Lock Set	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-144	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-153
8-10,000'	SLP Blue / Pink 140/340 #40-76	SLP# 40-150 (60.7g) 2 Set Screws 1 Lock Set	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-144	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-153
10,000'-12,000'	SLP Blue / Pink 140/340 #40-76	SLP# 40-154 (57g) 3 Set Screws 1 Lock Set	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-144	Black / Purple 160/240 SLP #50-55	60-42.36 SLP #50-153

Note: For 3" tracks it is recommended to run 1 less set screw.

Running RPM 8450-8700

If using SLP Power Dome™ Heads install 1 additional set screw.

Starting Line Products • 743 E. Iona Rd. Idaho Falls, ID 83401 • Sales (208)529-0244
Fax (208)529-9000 • web: www.startinglineproducts.com • e-mail: slp@slp.cc