



2012-2018 Can-Am Outlander /  
Renegade  
1.5" Forward A-Arms # S3169



**INSTALLATION INSTRUCTIONS**  
**Can-Am Outlander &  
Renegade 1.5" Forward  
A-Arms**



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## 1.5" Forward A-Arms # S3169

## PARTS LIST

ITEM	PART #	DESCRIPTION	QTY
	S3169-19+	Passenger Lower A-Arm	1
	S3169-19+	Driver Lower A-Arm	1
	S3169-19+	Passenger Upper A-Arm	1
	S3169-19+	Driver Upper A-Arm	1
	30081-6	Steering Stop Plate	1

### Tools Needed:

- Floor Jack
- Jack Stands
- Impact (1/2" or 3/8")
- Press (Strongly recommended if pressing out/in ball joints)
- Ratchet (1/2" or 3/8")
- Sockets (25mm or 1-1/16", 19mm, 17mm, Deep 15mm)
- Wrenches (19mm, 15mm, 10mm)
- 6" Extension (1/2" or 3/8")
- Flat Blade Screwdriver
- Needle Nose Pliers or Diagonal Cutters
- Snap Ring Pliers
- Dead Blow Hammer
- Brass Hammer
- Red Threadlocker
- Drill with 3/16" Drill Bit
- T30 Torx Bit

### Installation Notes:

- In an effort to keep track of hardware, we recommend replacing where removed from.
- Disassemble/assemble one side at a time so a fully assembled side can always be referenced for bolt placement, orientation, brake line routing, etc.
- Use red threadlocker on all fasteners during assembly, except lug nuts.
- Hand tighten all nuts during assembly, unless otherwise noted. Final tightening of all fasteners is one of the final steps.



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### Disassembly:

- 1.) Place unit in park (P) on a flat level surface and elevate front of machine. Support with suitable jack stands for safety.
- 2.) Remove front tires and wheels, using 17mm socket for OEM lug nuts.
- 3.) Separate brake line from OEM upper a-arm, using T30 Torx bit to remove plastic brake line protector/guide. Drill out rivet, using 3/16" drill bit.
- 4.) Remove the (2) brake caliper bolts with a 15mm socket. Remove caliper from rotor and secure caliper so there is no tension on the brake line. *(See Image 1) (Pro Tip : Ensure parking brake is disengaged. If parking brake on left brake lever is engaged, the caliper cannot be removed. Do not remove from park (P).)*
- 5.) Remove axle nut cover, using small flat blade screwdriver and pressing inward on tabs from back side of hub. *(See Image 2)*
- 6.) Remove cotter pin from front axle and outer tie rod end. These can be reused if undamaged during removal. If damaged, replace with new. *(Pro Tip : Needle nose pliers or diagonal cutters work well.)*
- 7.) Using a 25mm or 1-1/16" socket on an impact, remove axle nut and spring washer.
- 8.) Rotor assembly can now be removed. Set aside safely.
- 9.) Using 19mm socket, remove outer tie rod end nut. Utilize 15mm wrench flat on upper portion of outer tie rod end stud. *(See Image 3)*
- 10.) The outer tie rod end is a tapered press fit into the steering knuckle. Firmly (but not aggressively) tap steering knuckle with brass hammer to separate tie rod end from steering knuckle – taking care to not damage anything. *(See Image 4)*
- 11.) Remove lower ball joint pinch bolt, using 15mm socket and wrench.
- 12.) Using dead blow hammer, tap lower a-arm to release ball joint from steering knuckle.
- 13.) Remove the (2) inner bolts securing lower a-arm to frame, using 15mm socket and wrench. Lower a-arm can now be removed.
- 14.) Using 15mm socket and wrench, remove lower shock bolt. *(Pro Tip : Secure shock out of the way using a bungee or ratchet strap.)*
- 15.) Remove the (2) inner bolts securing upper a-arm to frame, using 15mm socket and wrench. Upper a-arm and steering knuckle can now be slid off outer axle splines.
- 16.) Remove 19mm nut and washer from upper ball joint. *(Pro Tip : Use 6" extension and insert upward through bottom ball joint hole in knuckle to allow impact access. The upper ball joint stud is a tapered press fit into steering knuckle. Once nut and washer have been removed, use brass hammer to tap on knuckle to release ball joint and upper arm from knuckle.) (Note : Steering knuckles are side specific and are labeled "LH" and "RH") (See Images 5 & 6)*
- 17.) Remove OEM bushings and pivot tubes from OEM a-arms, if reusing.



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#### **18.) IMPORTANT** – Note direction of removal/install of ball joints!!

If reusing OEM ball joints, remove them from OEM a-arms using a bearing press or similar. Be sure to remove ball joint retaining rings first, using snap ring pliers, taking care to not damage them as they will be reused. *(Pro Tip : Using a small flat blade screwdriver, remove the (4) ball joint rubber boots to not damage them during removal/install and set aside. Use caution to not puncture the ball joint boots. Extra grease may be added to ball joints before reinstalling them.)*

#### **Assembly:**

**19.)** Locate/separate driver side from passenger side S3 a-arms. *(See Image 7)*

**20.)** Carefully press ball joints into S3 a-arms in the same direction as OEM arms. *(Pro Tip : An arbor press or bearing press works well for this step.)*

**21.)** Reinstall ball joint boots and snap rings, taking care that they are seated properly.

**22.)** Install a-arm bushings and pivot tubes into S3 a-arms. *(Pro Tip : If reusing OEM bushings, clean bushings/pivot tubes well and apply grease to pivot tube before reinstalling. If installing S3 Titan HD Bushings, no grease is needed.) (Note : Metal wear sleeves will not be reused.)*

**23.)** Assemble S3 upper a-arm and steering knuckle, using OEM flat washer, nut (19mm) and red threadlocker. Final tighten to OEM specification. Reinstall cotter pin. *(Pro Tip : Reference step 16 to enable impact access.)*

**24.)** Slide steering knuckle back through axle and install inner upper a-arm bolts to hang S3 upper a-arm. *(Pro Tip : An assistant may be helpful for this step.) (Note : OEM cross plate may need to be removed to allow sufficient fitment. See Images 8 & 9)*

**25.)** Reattach tie rod to steering knuckle, using stock hardware.

**26.)** Install S3 lower a-arm into frame using stock hardware.

**27.)** Insert lower ball joint stud into steering knuckle. Reinsert stock pinch bolt and nut. *(Pro Tip : Cycle the suspension manually until pinch bolt installs freely, without binding. Slight taps from a dead blow hammer on bottom of ball joint fixture may be necessary.)*

**28.)** Attach shock to S3 upper a-arm shock mount using stock hardware.

**29.)** Reinstall hub/brake rotor assembly, ensuring splines of the hub line up with splines on axle. Reinstall axle spring washer and thread on axle nut. *(Note : Note orientation of spring washer. Curved side of washer should face outwards) (See Image 10)*

**30.)** Reattach brake caliper, using stock hardware. Final tighten (15mm) to OEM specifications using red thread locker.

**31.)** Final tighten all remaining bolts, using red thread locker, to OEM specifications. *(Pro Tip : Refer to service manual for OEM torque specifications.)*



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- 32.)** Install axle nut cover and zip tie brake line to brake line guides on S3 upper a-arm. (See *Images 11 & 12*)
- 33.)** Remove inner tie rod end nut and cotter pin, using 19mm wrench, to install provided Steering Stop Plate on top of pitman arm. Final tighten using red threadlocker to OEM specifications. Reinstall cotter pin. (See *Image 13 for orientation*)
- 34.)** Install wheels/tires. Remove jack/jack stands.
- 35.)** Drive machine briefly to settle suspension.
- 36.)** Using a long straight edge at the same area on both front tires, measure across the front of the front tires and measure across the back of the front tires. The difference between these 2 measurements should be negative, or toed outward. (See *Images 14 & 15*) (*Pro Tip : A level works well for this step, as well as an assistant.*)
- 37.)** With the front end toed outward, it will need to be adjusted - also known as an alignment. The goal of the alignment is to have the distance measured previously to be identical.
- 38.)** To adjust toe in/toe out, loosen inner and outer tie rod jam nut, using 17mm wrench on jam nut and 10mm wrench on tie rod wrench flat.
- 39.)** IMPORTANT – Adjust toe by turning/twisting tie rod. Be sure to count revolutions in 1/4 turn increments. Adjust driver and passenger side equally. (*Note : outer tie rod end threads are left handed.*)
- 40.)** See Image 16 of passenger side. Downward pressure on this wrench will cause the rear of the tire to travel outwards, decreasing toe. The opposite is true on the driver side.
- 41.)** Once alignment (or zero toe) has been achieved, tighten tie rod end jam nuts to OEM spec using red threadlocker.
- 42.)** Test drive, then recheck all hardware/fasteners.

Thank you for choosing S3 Power Sports! Let us know if you have any questions! 855-221-7097



# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 1





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 2





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 3







# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 4





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 5





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 6





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 7





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 8





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 9





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 10





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 11







# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 12





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 13





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 14





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 15





# 2012-2018 Can-Am Outlander / Renegade 1.5" Forward A-Arms # S3169

Image 16

