



RALE®
I N D U S T R I E S

2021



ST120
INSTALLATION GUIDE



2021 RALE® ST120 INSTALL GUIDE
TD-32110
Revision: B
Release: 1-13-2021

WELCOME

Thank you for purchasing a RALE Industries ST120 snow bike conversion kit!

RALE Industries delivers a patented snowbike conversion kit offering unrivaled performance. By utilizing a single-shock design, the RALE snowbike provides typical dirt bike handling and agility through dirt bike rear suspension geometry, tune-ability and pivot points. The RALE ST120 translates the dirt bike riding experience directly to the snow.

This Installation Guide is to be used in conjunction with an application specific Fit Kit Guide, shipped with the Fit Kit.

Please retain this Installation Guide for usability and safety information. Consider it a part of the product.

If you need a copy of any documentation please contact us.

RALE Industries is distributed exclusively by Western Power Sports.

Web:

riderale.com

Email:

info@riderale.com

Customer Service:

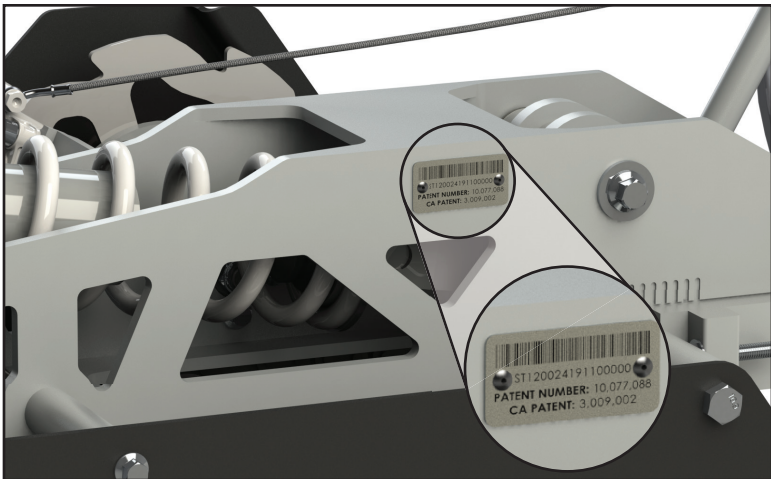
208-376-8400 x 3155

SERIAL NUMBER

NOTICE

Do not remove, paint over or cover the serial number plate.

The serial number will need to be referenced when communicating with your dealer or RALE Industries. It is located on the right side of the RALE Track Kit.



Record the following information:

RALE Serial Number: _____

Motorcycle Make: _____

Motorcycle Model: _____

Motorcycle Year: _____

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WARNINGS

Please review and familiarize yourself with the following warnings and their meanings. They will be found throughout this Installation Guide.

DANGER

Potential of death, serious harm or injury to the operator or bystander(s).

CAUTION

Possible damage to the motorcycle, track adaption system or adjacent property.

NOTICE

Specific instructions requiring extra attention or important things to note.

NOTE: It is not possible for RALE to warn the owner or operator of every conceivable DANGER, CAUTION or NOTICE that may be encountered in relation to the RALE ST120. It is the responsibility of the owner and/or the operator to exercise good judgment to stay safe at all times

DANGER: Cancer and Reproductive Harm www.P65Warnings.ca.gov

Before operating a vehicle equipped with a RALE Track Kit, all operators should read and become familiar with the User's Manual. The latest digital version of this manual can be found online at www.riderale.com

The document number, version number and release date of this manual can be found on the inside cover.



INSTALLATION GUIDE



BIKE TEAR DOWN

CAUTION

It is essential to utilize the host bike user's/owner's manual and/or service manual for detailed disassembly procedures.

If using a motorcycle stand and/or lift, follow the stand's/ lift's safety guidelines and properly secure the bike from tipping, shifting, or falling.

Put the bike on a frame stand. An adjustable stand is best for the track kit installation.

Refer to the ST120 User's Manual for detail drawings and parts ID.

Start by removing the following parts from the host bike:

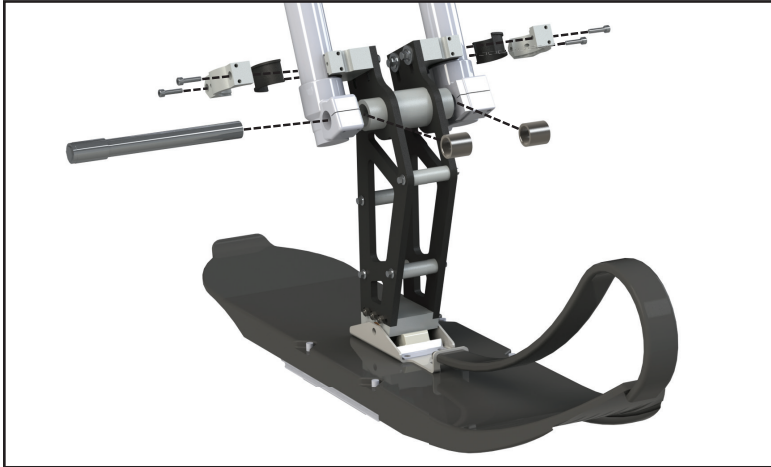
- Drive chain
- Rear shock (keep the bolts for later use)
- Rear swingarm linkage from frame (leave attached to the swingarm)
- Swingarm (keep the pivot axle and nut for later use)
- Rear brake line, master cylinder, and lever
- Front brake line, master cylinder, and lever

Do not remove the front wheel at this time

AIR BOX REMOVAL / MODIFICATION

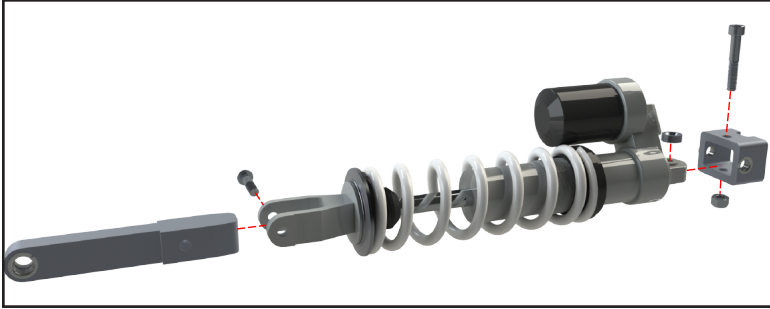
Modify the air box as needed to clear any interference the RALE Track Kit may cause. It may be necessary to change or modify the air intake system of the host bike.

SKI INSTALLATION



1. Remove the host bike front wheel and retain the axle for securing the ski tower.
2. Ensure the correct length ski spacers are installed as outlined on the fit kit page.
3. Fit the ski tower into position.
4. Insert the axle and tighten to the OEM host bike manufacturer's specifications.
5. Install the inside fork clamps. Use blue Loctite® 243 on the four screws that hold the fork clamps. Torque to 160 IN-LB.
6. Install the outside fork clamps. Use blue Loctite® 243 on the four screws that hold the fork clamps. Torque to 100 IN-LB.

SHOCK PREPARATION



NOTICE

Not all OEM shocks have this same configuration. Refer to the model specific Fit Kit Guide, shipped with the Fit Kit.

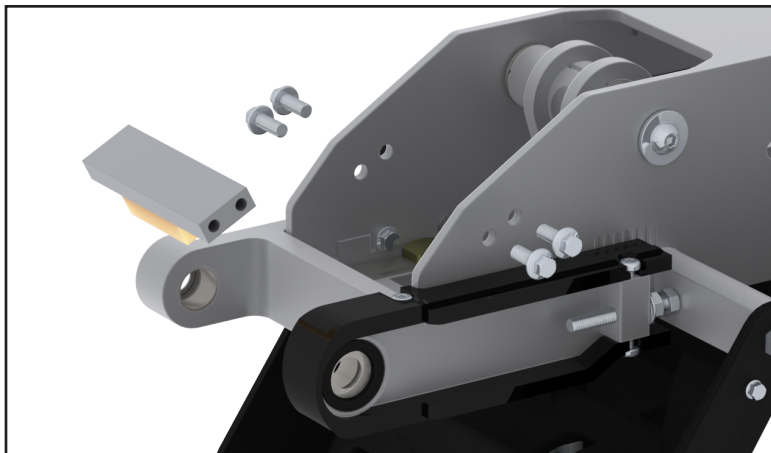
1. Install shock extender in the lower shock clevis using OEM bolt and or nut.
2. Install shock rotator with the shock spacer on top, use provided hardware.

NOTICE

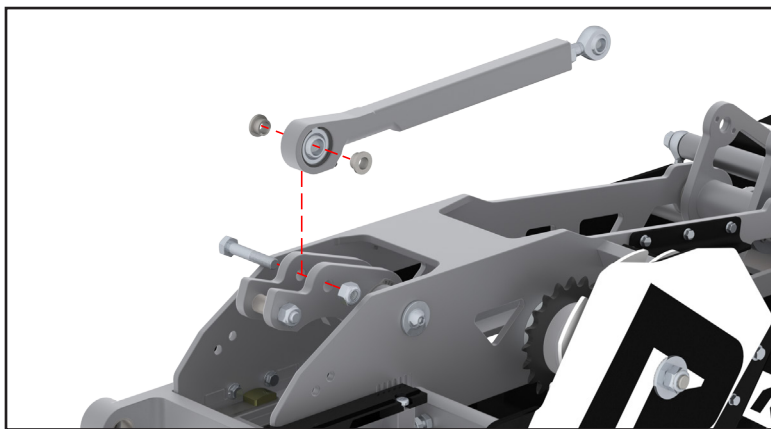
The shock spacer should be between the shock heim joint and the shock rotator. Some kits may not have a shock spacer.

3. Measure and record the spring length. _____
4. Loosen the shock spring pre-load adjuster to relieve all spring pre-load from the shock.

TRACK KIT INSTALLATION



1. Remove bellcrank A stop.



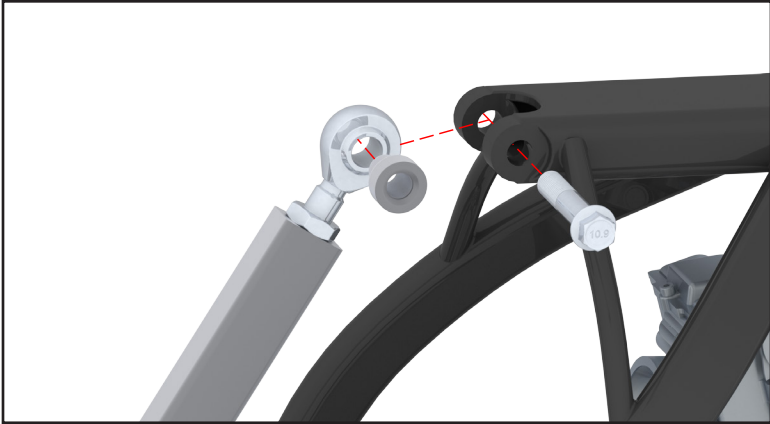
2. Install upper link and (2) Upper Link-M14 Spacers into bellcrank A. Torque to 40 FT-LB.



3. Re-install bellcrank A stop. Use blue Loctite® 243 on the four screws. Torque to 160 IN-LB.



4. Place the assembled shock into the center channel.
5. Attach the shock extender to bellcrank A.
6. The bolt can be accessed through the forward most triangle hole in the center channel. Torque to 40 FT/LB.



7. Install upper link and upper link spacer into the top shock mount of the bike using the OEM bolt. Torque the bolt to OEM user's/owner's manual.

NOTICE

Not all fit kits have this same configuration. Refer to the model specific Fit Kit Guide for the application.



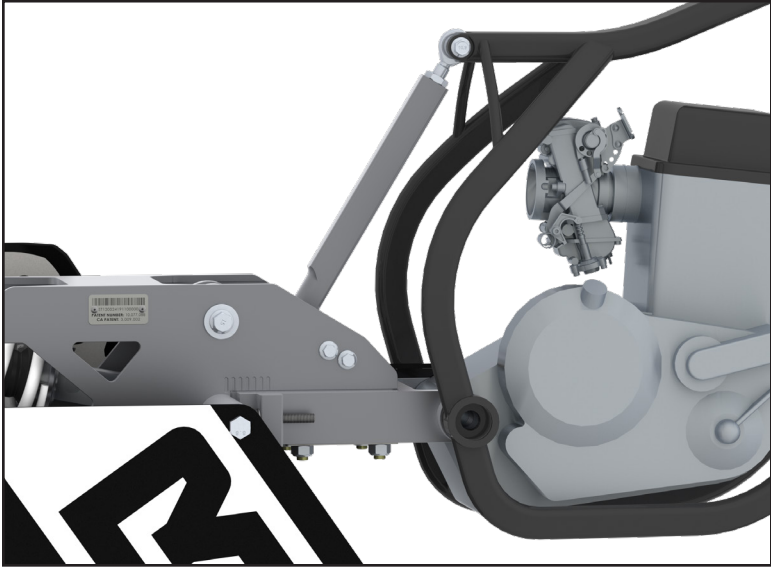
8. Lubricate the lower joint of the upper link using marine grade grease. RALE recommends WPS PN 58-5297



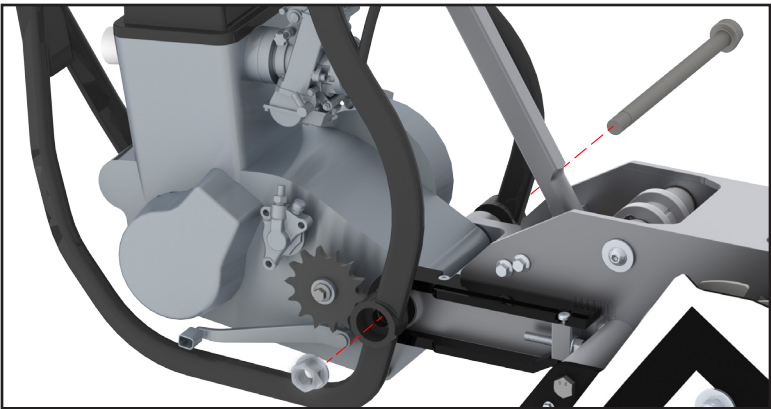
9. Install o-rings on the inside spacers.
10. Place inside spacers in yoke, make sure the o-rings are seated all the way into the yoke.
11. Place outside spacers in yoke, the seal should hold these in place.
12. Depending on the fit kit being installed, identification grooves are cut into the spacers. To see spacer placement, refer to the model specific Fit Kit Guide, shipped with the Fit Kit.

! CAUTION

Carefully review the model specific Fit Kit Guide for the application to ensure all spacers are installed in the correct location.

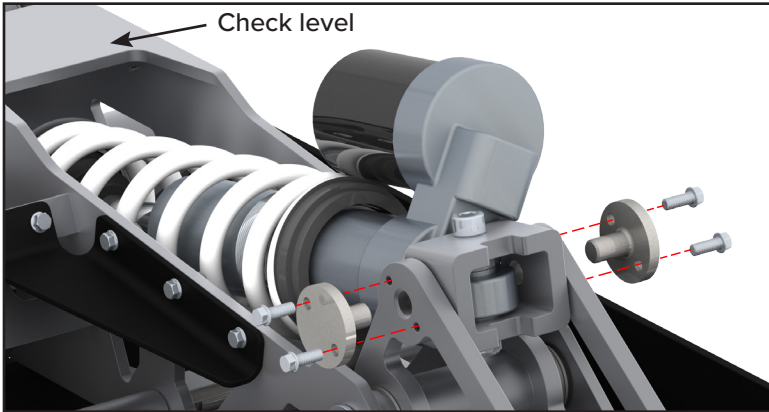


13. With the front of the bike tied down, raise the bike from under the frame until the yoke of the track kit is closely aligned with the swingarm pivot axle hole.



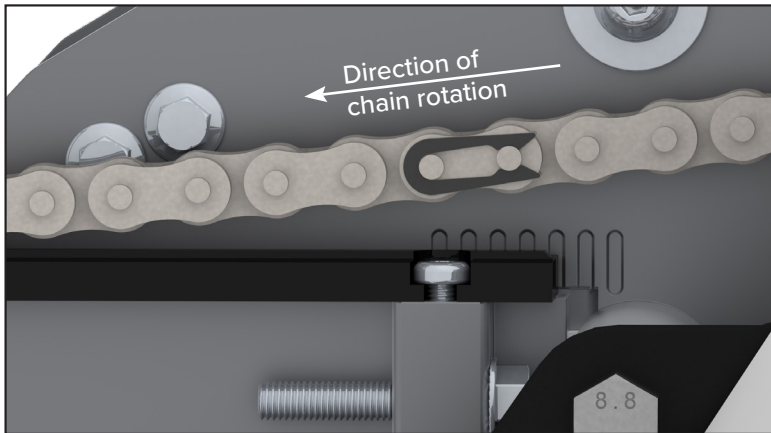
14. Move the track kit as necessary to align the yoke pivot hole with the bike frame's swingarm axle hole.
15. Install the OEM Pivot axle/nut do not use force.
16. Install the swingarm pivot axle in the same orientation it was removed from the host bike. Torque OEM axle/nut to host bike specs in the OEM User's/Owner's Manual.

SHOCK INSTALLATION

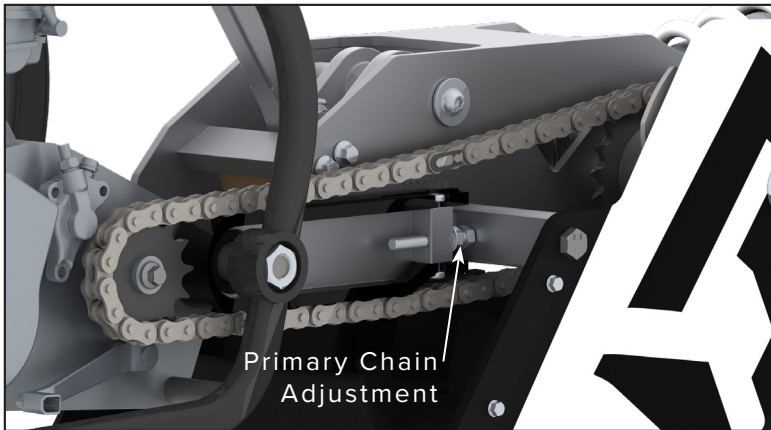


1. With all the spring pre-load relived, compress the shock.
2. Insert the shock rotator axles into bellcrank B. Do not use force, this will damage the bushings in the shock rotator.
3. Use blue Loctite® 243 on the four screws that hold the shock rotator axles. Torque to 100 in-lb.
4. With the bike on level ground, not supported by any stand, set the spring pre-load:
 - Set the handlebars straight
 - Set the bike stand so the forks are at 62°
 - Place a level on the center channel
 - Increase the pre-load until the center channel is level

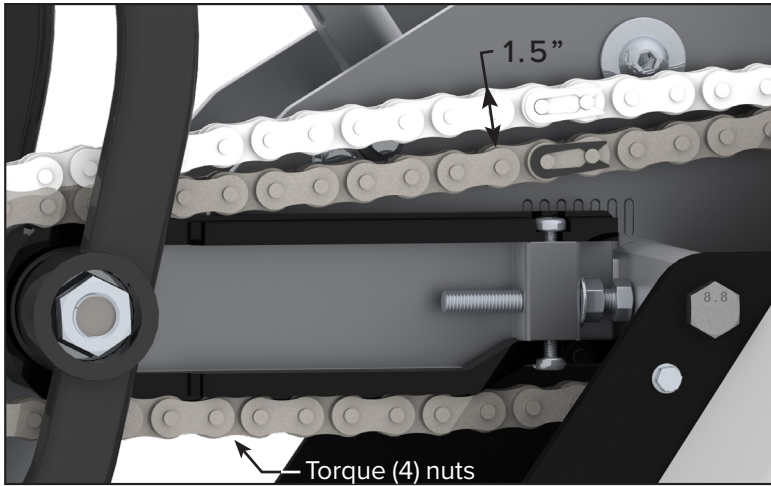
PRIMARY CHAIN INSTALLATION



1. Install the primary chain. Install the master link with the closed end of the spring clip towards the direction of chain rotation.

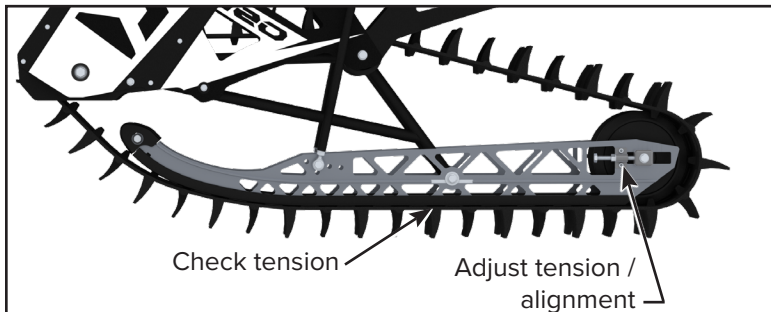


2. With the bike and track kit in a level position, set the primary chain slack. The chain should have $1.5" \pm .25"$ of slack.
3. Set the adjustment screws on both sides of the yoke until the head of the screw touches the spacer.
4. Tighten the nuts to lock each adjustment screw into position.



5. Torque the four nuts under the yoke to 30 FT/LB.

SETTING TRACK TENSION



1. Raise the bike until the track kit is fully suspended.
2. The adjustment screws at the rear bogie wheels adjust the track alignment and tension.
3. Tighten the track until there is 3/4" to 1" of slack between the track and the hyfax.
4. Using the nuts on the adjustment screws lock adjustment into position.
5. Torque the track kit rear axle bolts to 50 FT/LB

SETTING TRACK ALIGNMENT

1. Raise and securely position the bike until the track kit is FULLY SUSPENDED.
2. The adjustment screws at the rear bogie wheels adjust the track alignment and tension.
3. Start the host bike in neutral. While idling, put the bike in gear to engage the RALE Track Kit and let it spin for 15-30 seconds.
4. STOP the RALE Track and TURN OFF the engine.
5. Check for even alignment along edge of the hyfax compared to the track.
6. Tighten and/or loosen the left or right side track adjustment screws 1 to 2 turns depending on the necessary adjustment.
7. Repeat steps 3 - 6 until the track is aligned.
8. Tighten or loosen both sides of the rear axle equally until there is 3/4" to 1" of slack between the track and the hyfax.
9. Tighten the nuts to lock each adjustment screw into position.
10. Torque the track kit rear axle bolts to 50 FT/LB

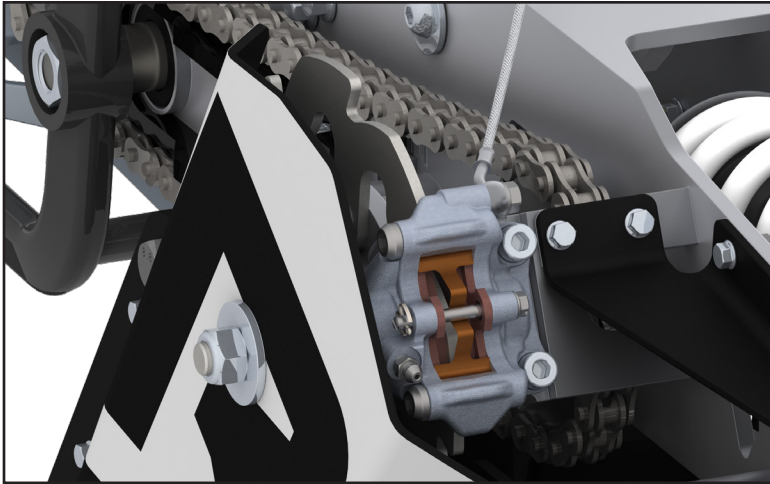
CAUTION

Proper track tension and alignment are important to the operation and wear of the RALE Track Kit.

DANGER

To avoid serious injury or death: prevent objects, clothing, or extremities from becoming entangled or jammed in and around moving parts. IMMEDIATELY STOP THE ENGINE AND ENGAGE THE BRAKE IF THIS CAN OR DOES OCCUR.

BRAKE INSTALLATION



1. Remove the OEM front brake master cylinder and lever from the handlebar.
2. The RALE brake system is pre-bled.
3. Install the brake caliper to the mount using the provided caliper bolts and blue Loctite® 243. Torque to 160 IN-LB.
4. Disconnect the brake line at the master cylinder. Do not pull the brake lever while the line is disconnected.
5. Mount the master cylinder and lever to the handlebars. Feed the line up through the frame of the bike to the master cylinder and reconnect it.
6. The RALE Track Kit brake system may need to be bled again.

TIP: If the brake lever doesn't have a firm pull after reconnecting the brake line, place a zip tie or rubber band around the lever and handlebar overnight. This may remove any air from the system.

CAUTION

Route and restrain the brake line to avoid contact with any moving or potentially hot parts. Allow enough slack for the RALE Track Kit to move freely through the stroke, and the handlebars to turn unrestrained.

CONCLUSION

Please refer to the RALE User's Manual for information about set-up, safety, maintenance, part diagrams, and torque specs

Please reach out to RALE Industries with any questions:

Email: info@riderale.com

Customer Service: 208-376-8400 x 3155