

4200 ATR Rack & Pinion Update Kit Assembly Instructions



For The All Terrain Runabout Vehicle

Manual No. 710-069M

Before You Start



When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

IMPORTANT: Before you begin, read these instructions and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

Your Rack & Pinion Update Kit is exclusively designed for your Land Pride 4200 ATR. Please read these installation instructions and your 4200 ATR Operator's Manual thoroughly before beginning. Especially read information relating to safety concerns, jacking the vehicle and working under the vehicle.

A separate Parts Manual for replacement parts can be purchased from your nearest Land Pride dealer or downloaded free of charge from our web site at www.landpride.com. Have model and serial numbers handy when placing an order.

Manual Part Numbers:

- Operator's Manual 710-040M
- Parts Manual 710-040P

Further Assistance

Your dealer wants you to be satisfied with your new Rack & Pinion Update Kit. If you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss the matter with your dealership service manager making sure he is aware of any problems you may have and that he has had the opportunity to assist you.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the problem and request assistance.
3. For further assistance write to:

Land Pride Service Department
1525 East North Street
P.O. Box 5060
Salina, Ks. 67402-5060

E-mail address
lp servicedept@landpride.com

Tools required

- Safety glasses
- Work gloves
- Pencil
- Tape Measure
- Center punch
- Hammer
- Electric drill with 3/16", 3/8", & 13/32" drill bits
- Extension cord (if required)
- Two 1/2" & two 9/16" wrenches

Assembly Instructions

These assembly instructions apply to the following Rack & Pinion Update Kit listed below:

710-069A Rack & Pinion Update Kit

A detailed listing of parts for this accessory kit is provided on page 5. Use the list as a checklist to inventory parts received. Please contact your local Land Pride dealer for any missing hardware.

Jacking the Vehicle



DANGER

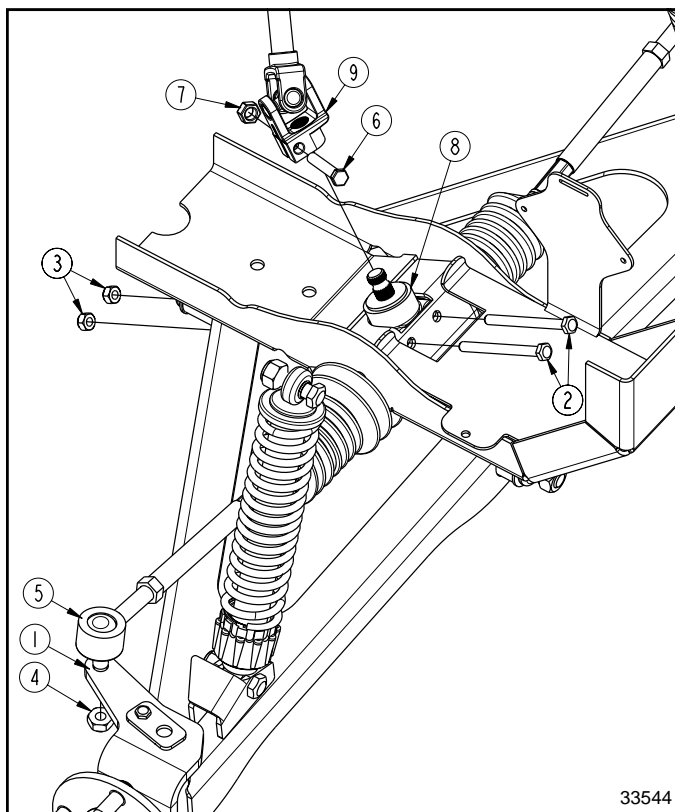
For your safety and safety of others, the vehicle must be supported properly with jack stands before working under and around it. The wheels on the ground must be chocked on both sides to prevent the vehicle from rolling forward or backward.

IMPORTANT: Use a hydraulic jack, floor jack, or scissor type jack to lift the vehicle. Do not use a handyman jack or bumper jack and don't jack against the bumper, body, rear transmission, or axles.

1. Park vehicle on a level surface, set park brake, turn ignition switch off and remove switch key.
2. Chock front and back side of the wheels not being raised off the ground.
3. See important note above. Center jack under the body frame between the two A-Frame struts at the front of vehicle.
4. Jack vehicle only high enough to do the work intended.
5. Support the vehicle securely with jack stands before working under or around the vehicle.
6. Work may now be performed on the vehicle.

NOTE: Wheels are shown removed in many of the illustrations for clarity only. They do not need to be removed to install this Kit.

Assembly Instructions



Remove Existing Rack And Pinion
Figure 1

Remove Existing Rack & Pinion

Refer to Figure 1:

1. Unscrew locknut (#4) and lift tie rod end (#5) out of the right hand wheel yoke (#1). Screw locknut (#4) back onto tie rod end for safe keeping.
2. Repeat step 1 for the left hand side.
3. Unscrew nylock nut (#7) and remove bolt (#6).
4. Unscrew nylock nuts (#3) and remove M8 metric bolts (#2).
5. Remove existing rack and pinion with tie rods (#8) from lower steering yoke (#9) and vehicle frame.

Remove Lower Steering Column

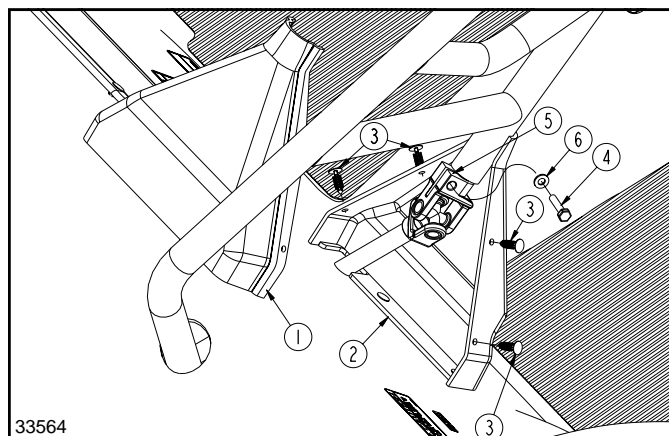
Refer to Figure 2:

1. Pull tree rivets (#3) from both sides of steering covers (#1 & #2) and remove upper cover (#1).
2. Unscrew bolt (#4) and remove with washer (#6).
3. Remove steering column (#5).

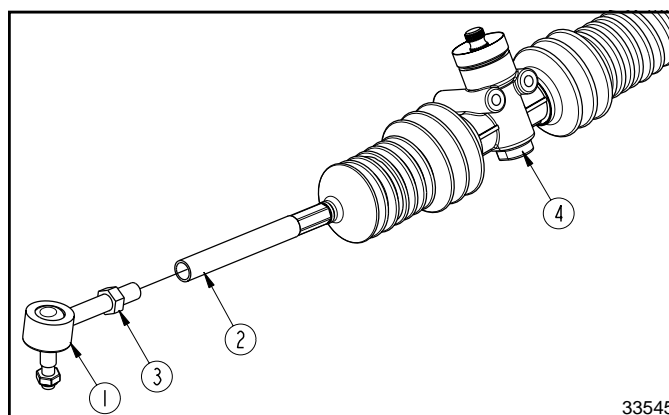
Remove Tie Rod Ends

Refer to Figure 3:

1. Loosen jam nut (#3) one-half turn.
2. Unscrew tie rod end (#1) until removed from adjustment rod (#2).
3. Repeat steps 1 & 2 above for the other end.



Remove Lower Steering Column
Figure 2

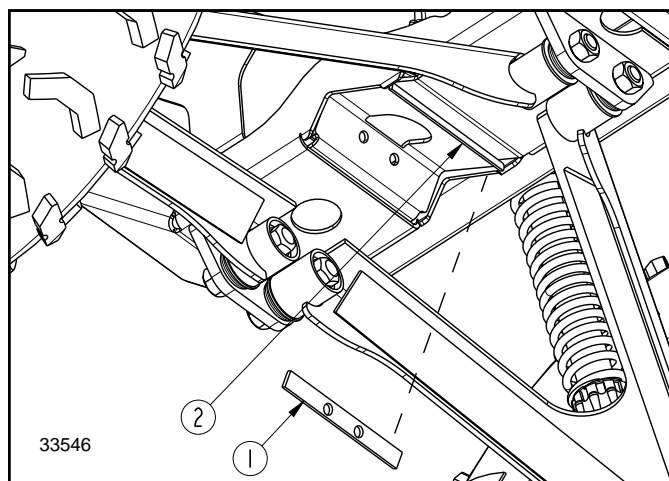


Remove Tie Rod Ends From Existing Tie Rods
Figure 3

Cut Mounting Flange Off

Refer to Figure 4:

1. Cut along the bent edge (#2) of existing Rack & Pinion mounting flange and remove cut piece (#1) from underside of ATR frame.



Cut existing Mounting Flange From Underside of Frame
Figure 4

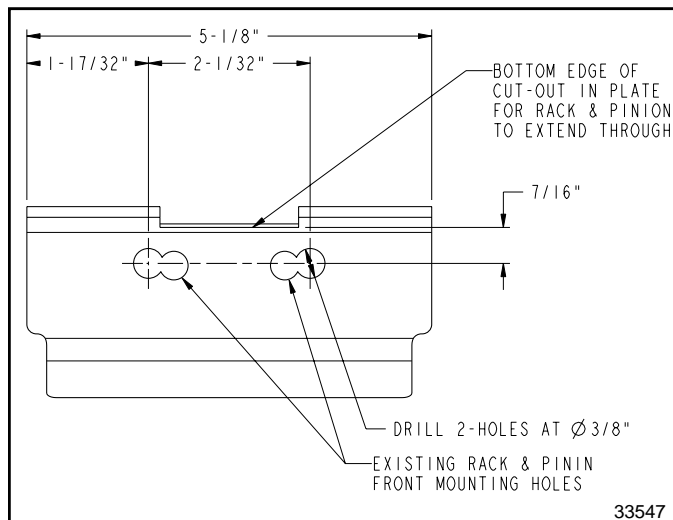
Assembly Instructions

Drill Front Mounting Holes

Refer to Figure 5:

1. From under the ATR, locate the two existing rack & pinion front mounting holes.
2. From bottom edge of cut-out in existing mounting plate, measure down $7/16"$ and draw a line parallel to the bottom edge of cut-out in existing plate.
3. Measure $1\ 17/32"$ in from one side of existing mounting plate and make a cross-hair mark on the existing plate at this location.
4. Measure over another $2\ 1/32"$ for the second hole and make a second cross-hair mark.
5. Center punch cross-hair marks for drilling.
6. First drill $3/16"$ holes on the cross-hair marks and then redrill holes to $3/8"$ diameter.

NOTE: $3/8"$ Holes may be slotted with existing mounting holes if preferred.

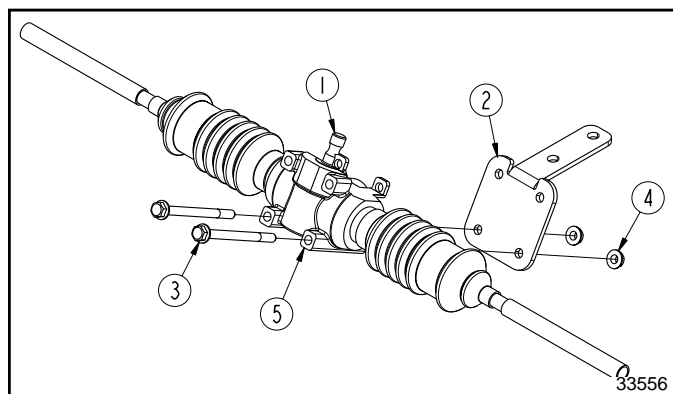


Locate & Drill Two $3/8"$ Diameter Holes
View From Underside of ATR Frame
Figure 5

Assemble Bracket to Rack & Pinion

Refer to Figure 6:

1. With splined input shaft (#1) up, attach bottom of mounting bracket (#2) to bottom of rack & pinion with two $5/16"$ - 18 x 4" GR5 hex flange cap screw (#3) and hex flange lock nuts (#4).
2. Draw hex flange lock nuts up snug, do not tighten until later.

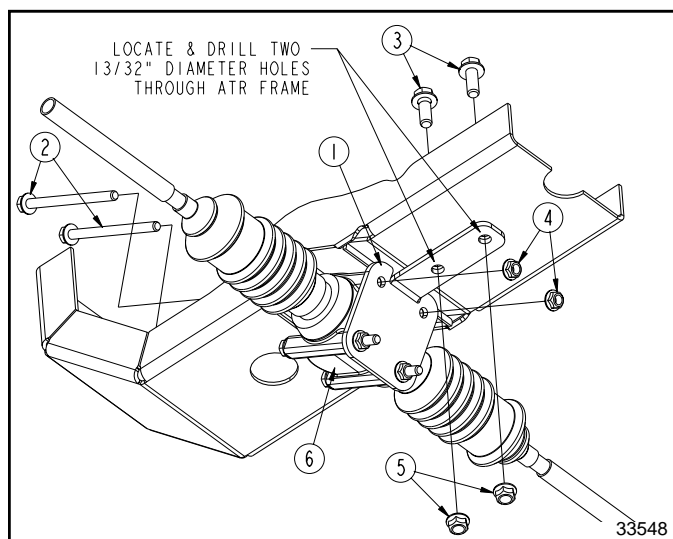


Attach New Mounting Bracket To New Rack & Pinion
Figure 6

Attach Mounting Bracket to Frame

Refer to Figure 7:

1. Attach mounting bracket (#1) with rack & pinion (#6) to previously drilled $3/8"$ mounting holes with $5/16"$ - 18 x 4" GR5 hex flange cap screw (#2) and hex flange lock nuts (#4).
2. Draw hex flange lock nuts up snug, do not tighten locknuts until step 6 below.
3. Push mounting bracket (#1) against ATR frame to locate the remaining two holes through the holes in the finger of the mounting bracket.
4. Without removing mounting bracket (#1), center punch and drill two $13/32"$ diameter holes through bottom of ATR frame.
5. Attach finger of mounting bracket to the ATR frame with two $3/8"$ - 16 x 1" GR5 hex flange cap screws (#3) and hex flange lock nuts (#5). Tighten lock nuts (#5) to the correct torque.
6. Tighten all four $5/16"$ lock nuts (#4) to the correct torque.



Attach Mounting Bracket to Frame
Figure 7

Assembly Instructions

Rotate Steering Wheel Into Position

Refer to Figure 8:

1. Rotate steering wheel to drive straight as shown.

Install Lower Steering Column

Refer to Figure 9:

1. Attach new lower steering column (#5) to upper steering column with new flat washer (#6) and bolt (#4). Tighten bolt to the correct torque.
2. Do not attach steering covers (#1 & #2) together until step 7 below.

Attach Tie Rods & Steering Linkage

Refer to Figure 10:

1. Adjust jam nuts (#7) on both tie rod ends (#5) an equal distance "A" from threaded end of tie rods.
2. Screw tie rod ends (#5) onto adjustment rods (#6) until jam nuts are snug against adjustment rods.
3. Insert right hand tie rod end (#5) into wheel yoke arm (#1) and secure with hex lock nut (#4). Tighten lock nut to the correct torque.
4. Insert left hand tie rod end (#5) into wheel yoke arm (#2) and secure with hex lock nut (#4). Tighten lock nut to the correct torque.
5. Rotate front wheels to drive straight.
6. Insert steering yoke (#10) over splined input shaft (#3) and insert M8-1.25 x 30 mm hex head cap screw (#8). Do not install nylock nut (#9) until step 8.
7. Verify steering wheel and front vehicle wheels are positioned to drive straight. If not, remount steering column (#10) at the rack and pinion input shaft (#3).
8. Secure bolt (#8) with nylock nut (#9). Tighten nylock nut to the correct torque.
9. Refer to Figure 9: Attach upper steering cover (#1) to lower steering cover (#2) with tree rivets (#3).

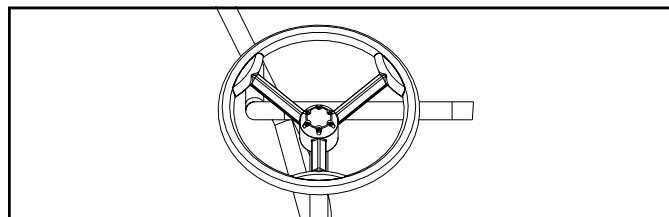
Wheel alignment

Refer to Figure 10:

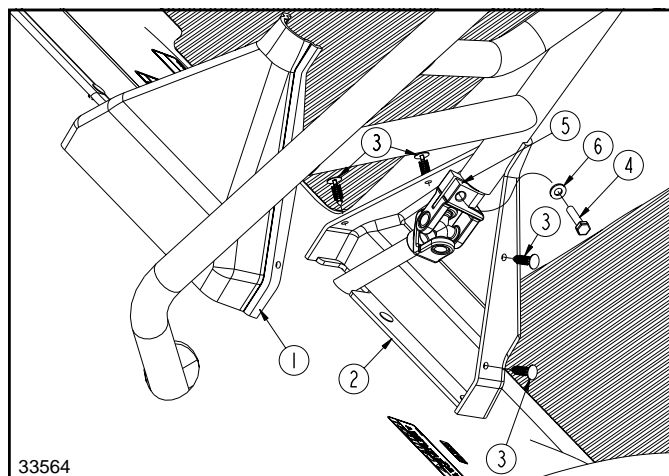
1. Screw right and left hand tie rods in or out an equal number of turns until front wheels are toed in 1/8" more at the front than at the back.
2. Tighten jam nuts (#7) to the correct torque.

Lowering Vehicle With Jack

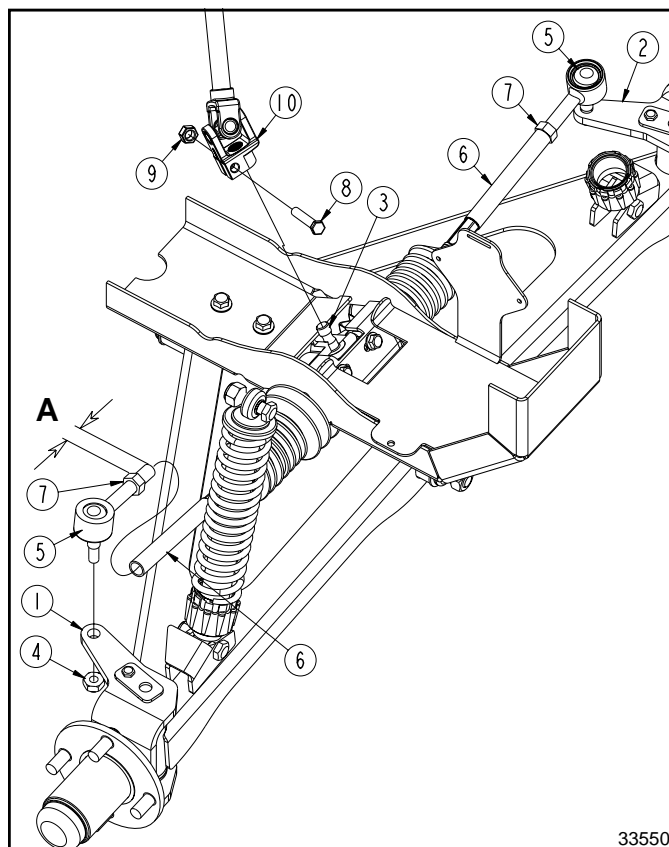
1. Be sure to properly torque all bolts that were loosened. Wheel bolts, if loosened, should be torqued after the vehicle is lowered to the ground.
2. Lower vehicle by first jacking vehicle up just enough to remove jack stands. Then carefully lower jack until vehicle is on the ground.
3. Remove wheel chocks once vehicle is safely on the ground.



Steering Wheel Positioning
Figure 8



Install Lower Steering Column
Figure 9



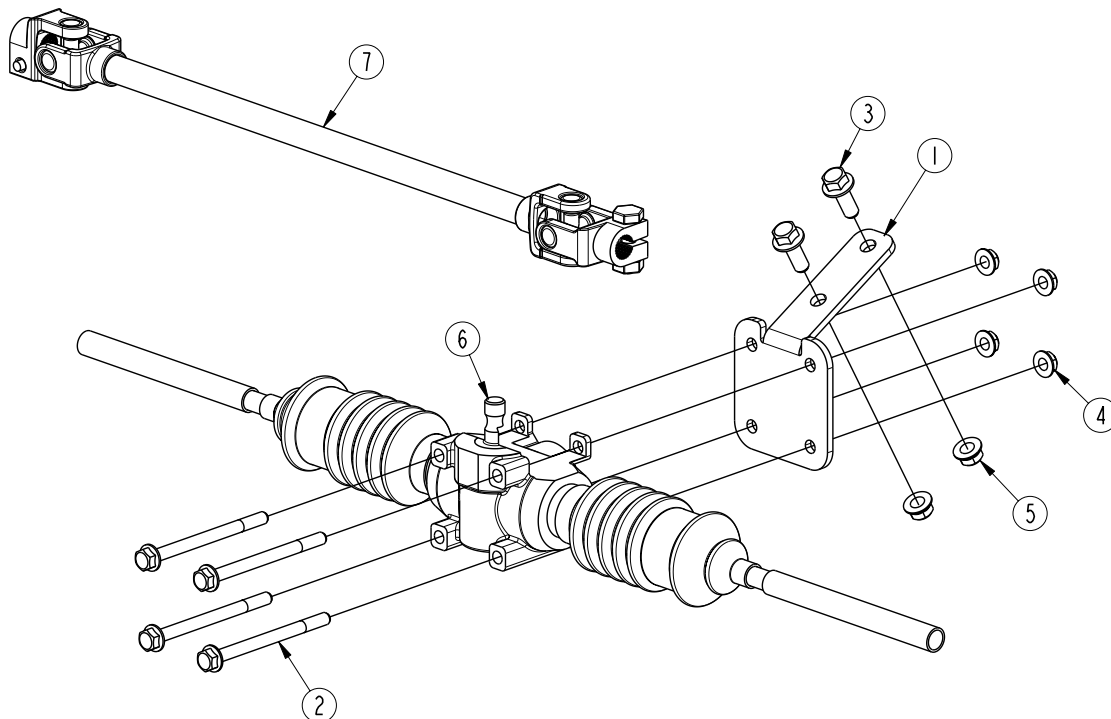
Attach Tie Rods & Steering Linkage
Figure 10

Listing of Parts

Kit No. 710-069A

4200 ATR Rack & Pinion Update Kit

Item	Part No.	Part Description	Qty
1	710-139D	BRACKET, RACK MOUNT ADAPTER	1
2	802-225C	HFS 5/16"-18 x 4" GR5 ZNYCR	4
3	802-388C	HFS 3/8"-16 x 1" GR5	2
4	803-177C	NUT HEX FLG TOP LOCK 5/16"-18 ZNYCR	4
5	803-209C	NUT FLANGE LOCK 3/8"-16 PLT	2
6	840-331C	ASSEMBLY, RACK & PINION	1
7	840-332C	SHAFT, LOWER SPLINED STEERING	1



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Corporate Office: P.O. Box 5060
Salina, Kansas 67402-5060 USA
www.landpride.com
