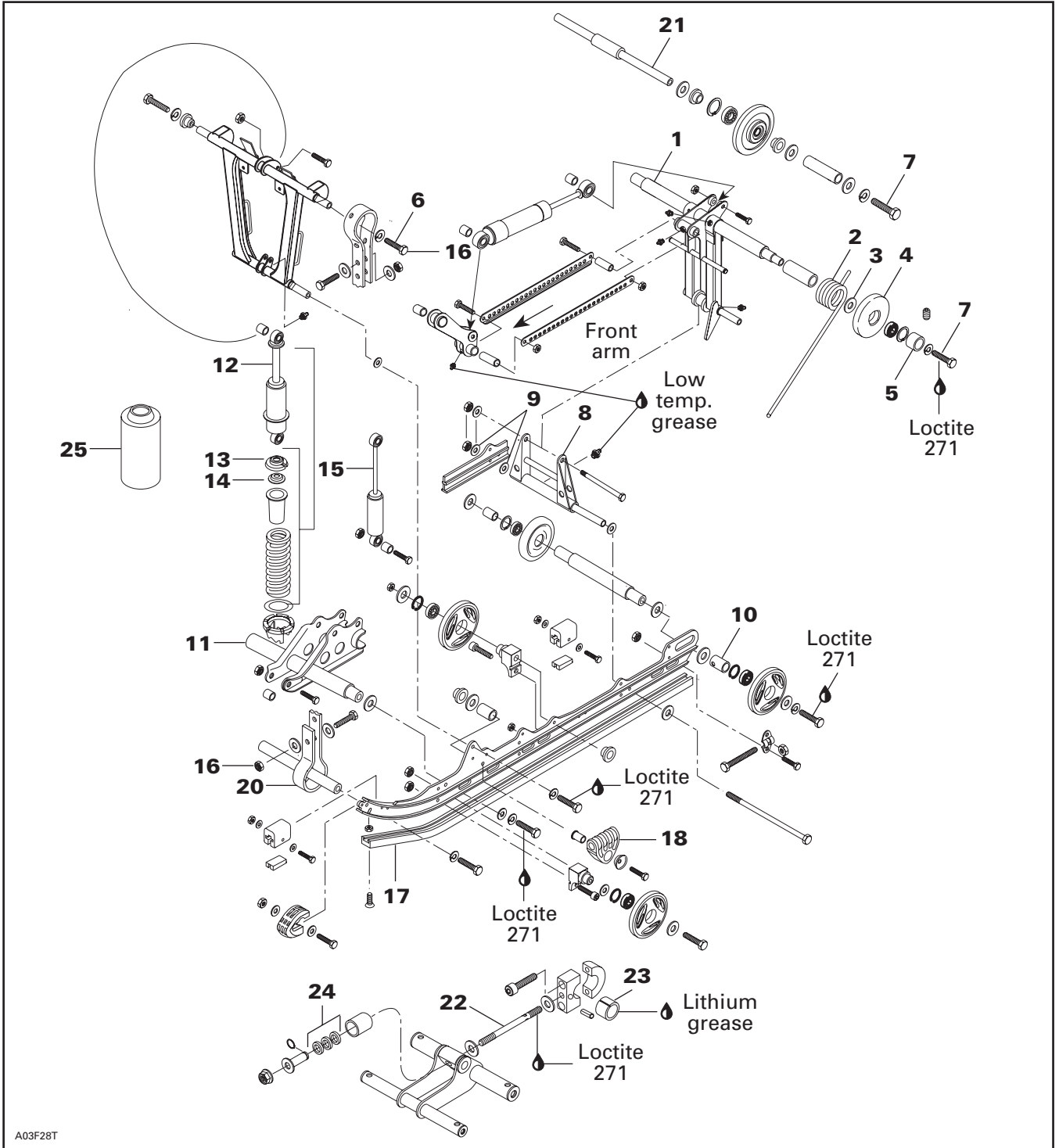


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SC-10 SUSPENSION

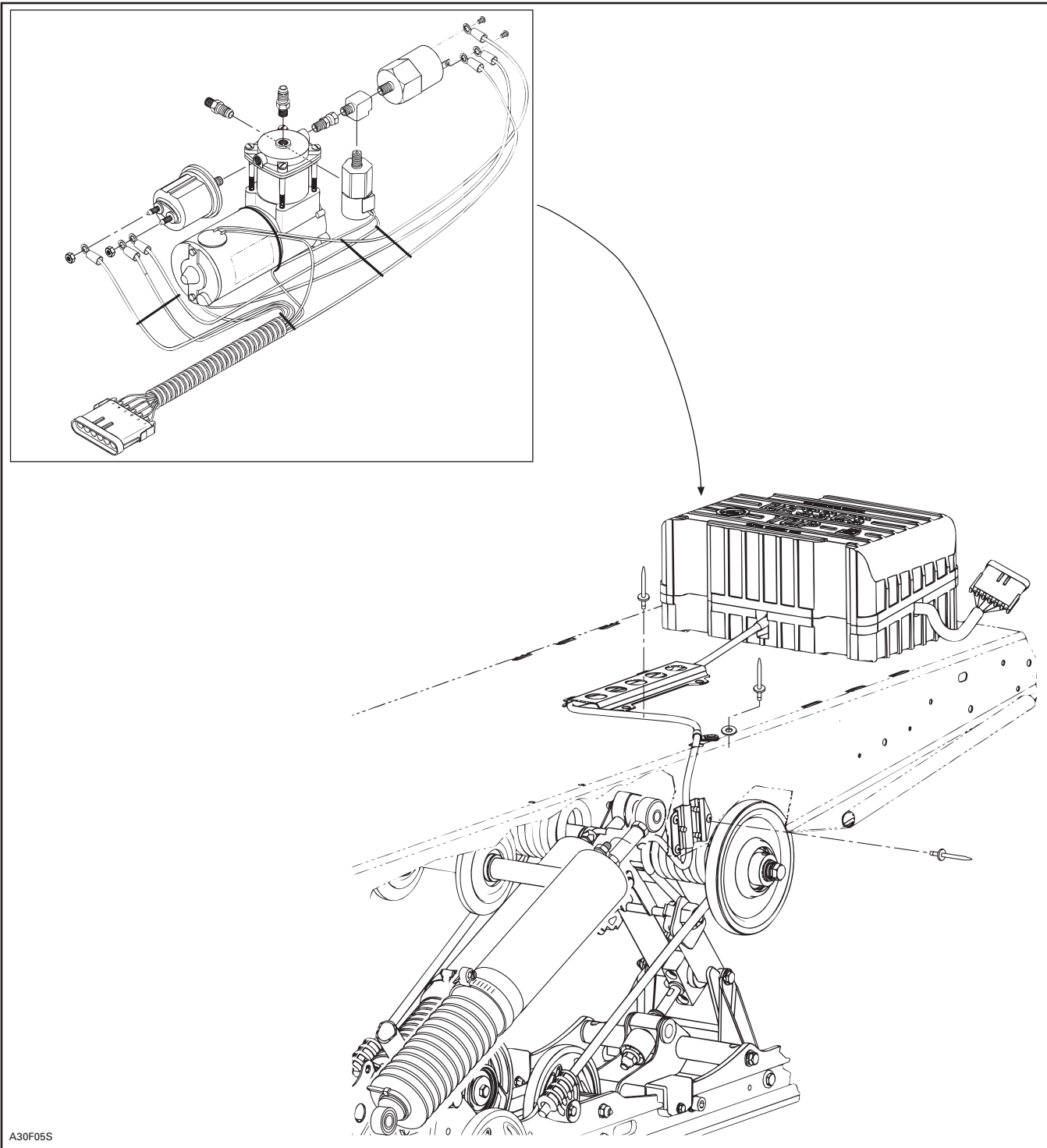
SC-10 High-Performance on All CK3 Models



Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSION)

Air Suspension Components on GT SE Only



A30F05S

COMPONENT REMOVAL AND INSTALLATION

Lift rear of vehicle and support it off the ground.

21, Rear Axle

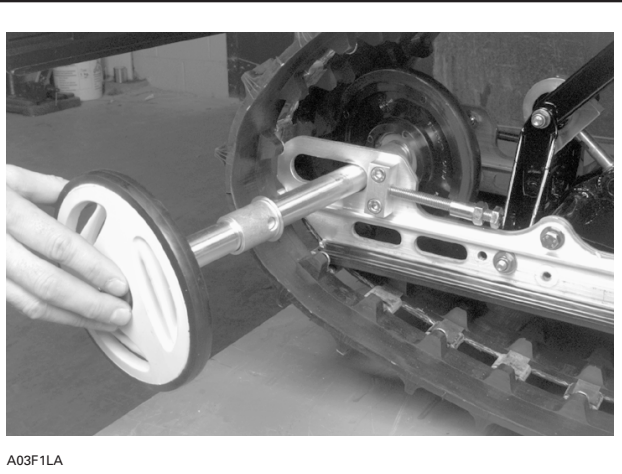
Completely loosen track tension.

Unscrew one rear idler wheel screw.

Pull out rear axle from opposite side of offset inner wheel. Proceed on either sides for models with 4 wheels on rear axle.

At assembly, temporarily loosen rear shackle lower pivot nut and ACM (Acceleration and Control Modulator) support rear bolt.

Align spacer hole with adjusting bolt.



TYPICAL

SC-10 HP and XC

22, Threaded Rod

NOTE: Do not disassemble threaded rod ass'y needlessly.

Lift rear of vehicle.

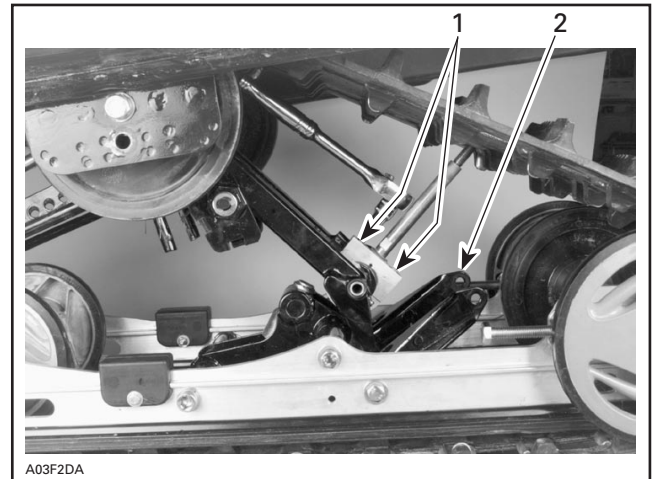
Unhook rear springs.

Unscrew threaded rod nut.

Remove through bolt from shackle.

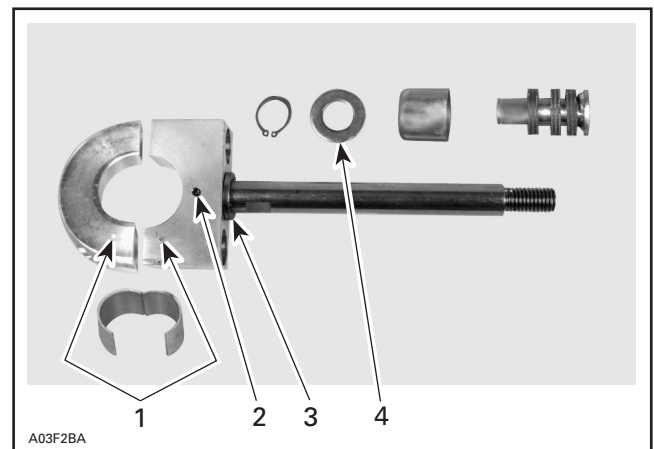
Swing shackle rearward.

Collapse suspension in order to disengage threaded rod from its support.



1. Block ass'y Allen screw
2. Shackle

Unscrew block ass'y Allen screws.



1. Marks
2. Roll pin
3. Smaller washer
4. Larger washer

23, Cushion

Separate pivot block.

Remove cushion.

Apply lithium grease on cushion at reassembly.

At assembly, match marked side of both pivot blocks.

When cup is disassembled, it may be too difficult to install circlip before reinstalling this assembly. Install all parts and the circlip loosely around threaded rod. Compress rear of vehicle or lift the front to easily install circlip in its groove.

Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSION)

25, ACM Support

Remove threaded rod ass'y. Loosen rear axle screw on one side and rear shackle screws.

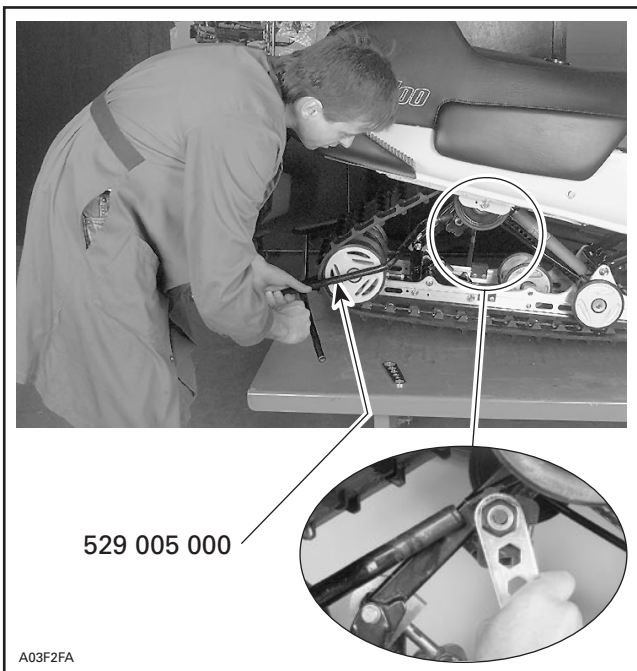
Unbolt ACM support and remove it.

Remove cup.

15, Rear Shock

Lift rear of vehicle.

Slightly turn adjusting cam to expose spring end. Using spring installer (P/N 529 005 000), remove left spring from adjusting cam.



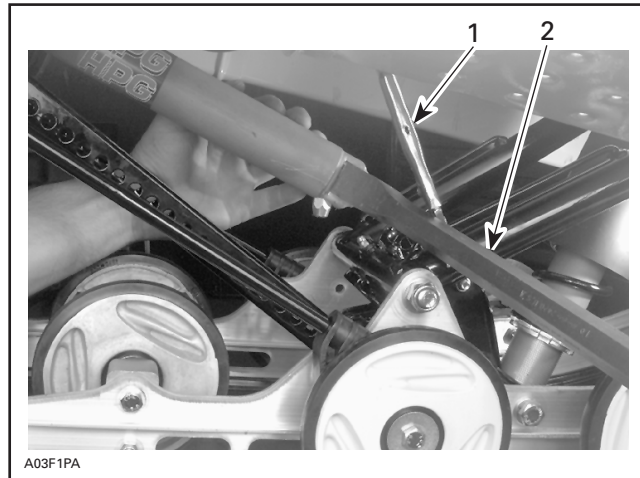
Remove nut on top end of shock.

Remove nut on bottom end of shock. Pry up shock bottom end to ease removing bolt (gas shock only). See installation illustration below.

Installation is reverse of removal procedure. To easily compress gas shock absorber, use a pry bar and locking pliers as a stopper.

▼ CAUTION

Take care not to damage grease fitting.



1. Locking pliers
2. Pry bar

12, Front Shock

Unfasten one end of stopper strap.

Unbolt shock and remove it.

2, Rear Spring

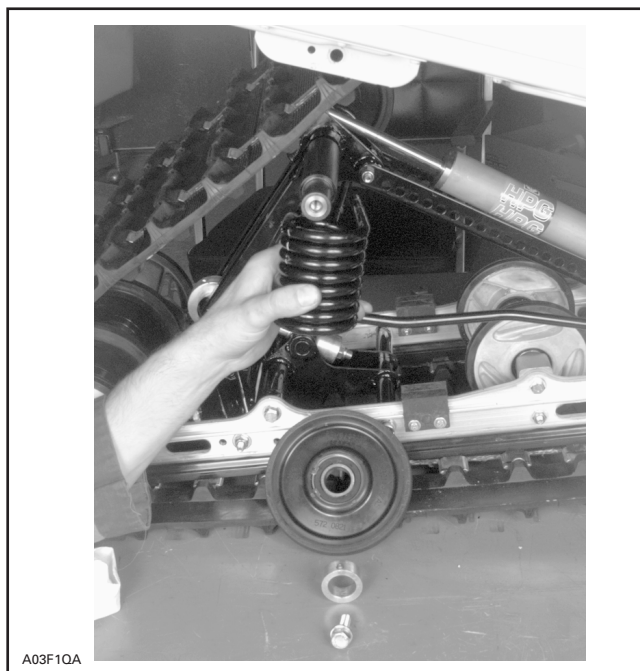
Remove spring ends from adjusting cams.

Unbolt rear arm top axle from chassis.

Unscrew set screws from locking ring at each end of top axle.

Remove locking rings (spacers on fan cooled models) and top idler wheels.

Remove springs.



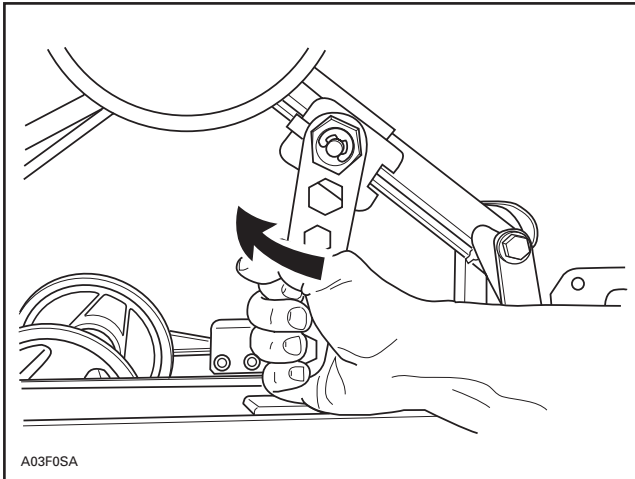
TYPICAL

At reassembly, wheel circlip must face outward.

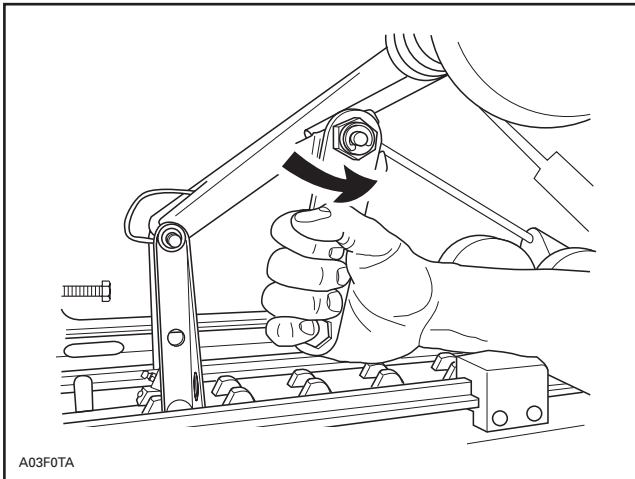
REMOVAL

19, Cam

Decrease spring preload by turning LH cam clockwise and RH cam counterclockwise.



LH SIDE SHOWN



RH SIDE SHOWN

Lift rear of vehicle and support it off the ground.
Loosen track tension.

7, Screw

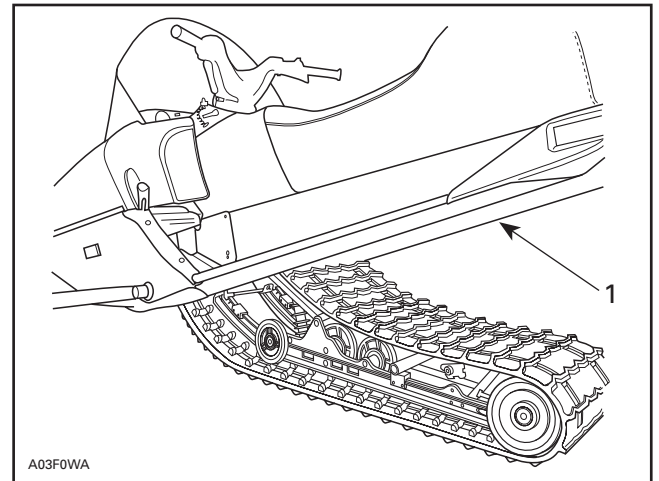
Unscrew rear arm top axle from chassis.

NOTE: To prevent axle from turning when unscrewing screws assembled with threadlocker, proceed as follows:

- Knock on screw head and/or heat to break threadlocker bond.
- Loosen one screw then retighten.
- Remove the opposite screw.
- Remove the first one.

Unscrew center idler wheel axle from tunnel then remove.

Lift rear of vehicle at least 1 m (3 ft).



1. At least 1 m (3 ft)

6, Screw

Remove both screws retaining front arm to tunnel.

Remove suspension.

DISASSEMBLY AND ASSEMBLY

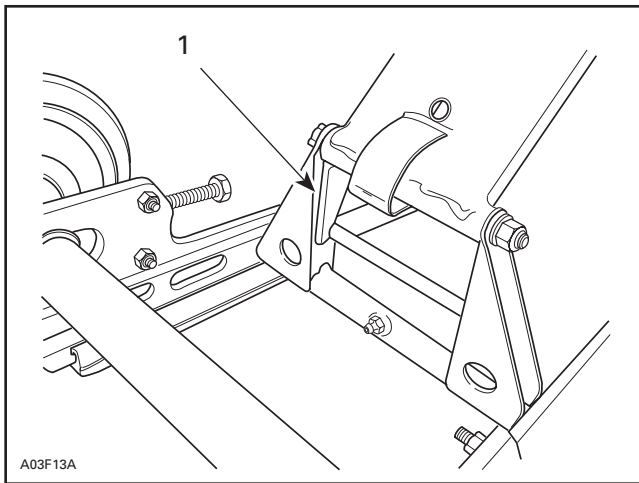
Inspect track thoroughly before reinstalling suspension. Refer to TRACK 07-04.

1, Rear Arm

At installation, rear arm stroke limiter must be on rear side.

Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSION)



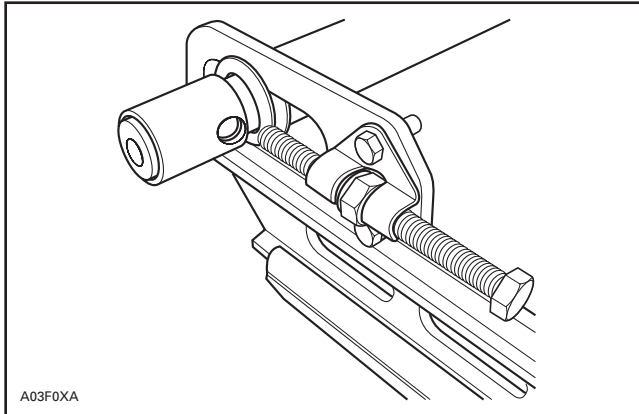
1. Stroke limiter on rear side

8,9, Pivot Arm and Flat Washer

At installation pivot arm grease fitting must face rearward.

10, Outer Bushing

At installation, hole must face adjustment screw.



11, Axle

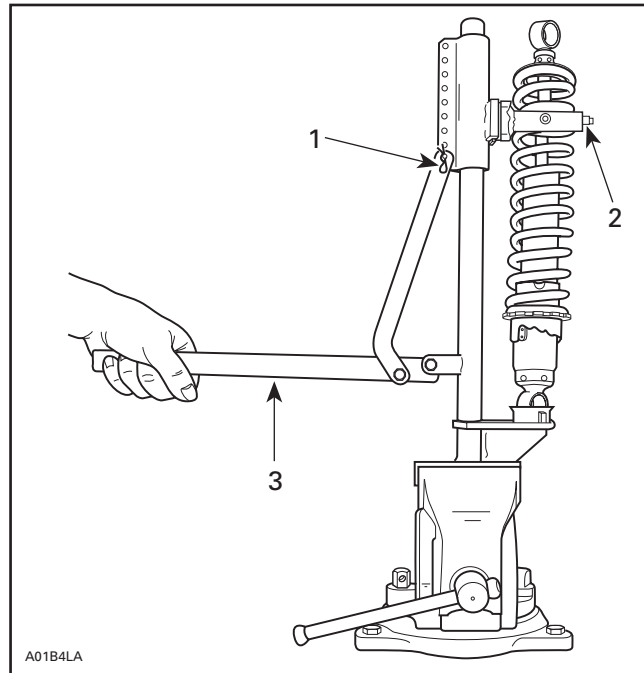
Note position of axles at disassembly. Axles with a paint stripe serve as idler wheel axles. These are more precise than those used as pivot axles. Idler wheel axles can be used as pivot axles but the opposite is not true.

12,13,14, Front Shock, Spring Stopper and Cap

Use shock spring remover (P/N 529 027 100) and put it in a vise. Mount shock in it and turn shock so that spring coils match spring compressor.

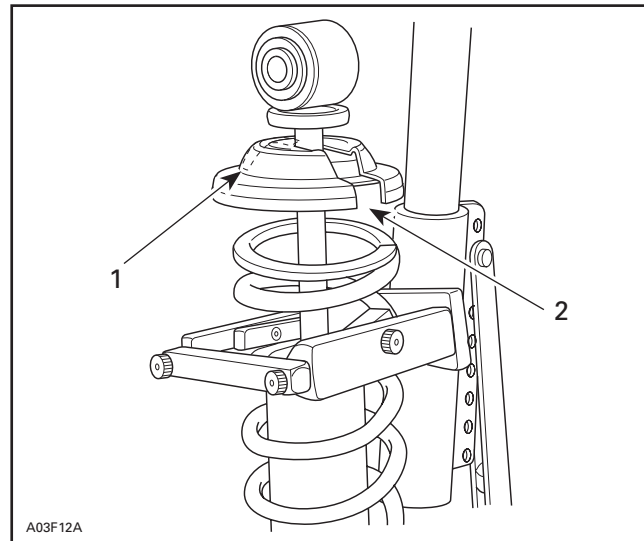
Close and lock bar. Adjust handle horizontal by changing position of clevis pin.

Push down on handle until it locks. Remove spring stopper and cap then release handle.



1. Clevis pin
2. Bar
3. Handle horizontal

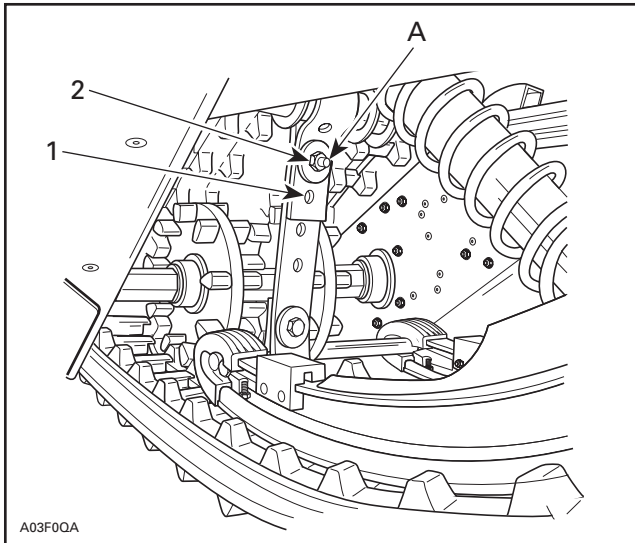
At installation, cap opening must be 180° from spring stopper opening.



1. Cap opening
2. Spring stopper opening

20, Stopper Strap

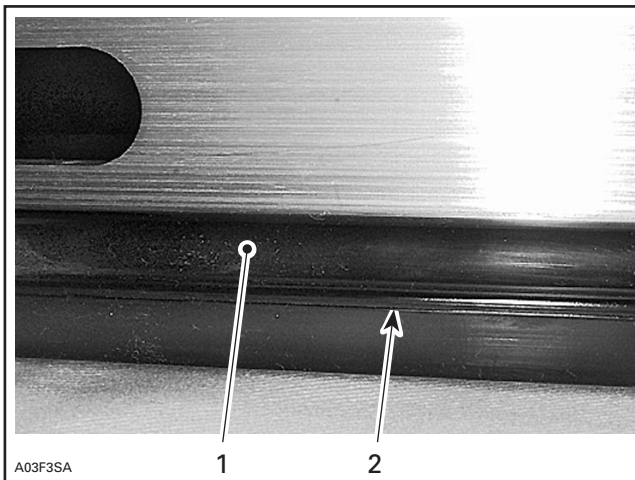
Inspect strap for wear or cracks, bolt and nut for tightness. If loose, inspect hole for deformation. Replace as required. Make sure it is attached through proper hole from the end. Refer to TECHNICAL DATA 10-03. Torque nut to 11 N•m (97 lbf•in).



- 1. 1st hole
- 2. 2nd hole
- A. 11 N•m (97 lbf•in)

17, Slider Shoe

Molding line is the wear limit indicator.



TYPICAL

- 1. Slider shoe
- 2. Molding line (wear limit indicator)

Replace slider shoes when wear limit is reached.

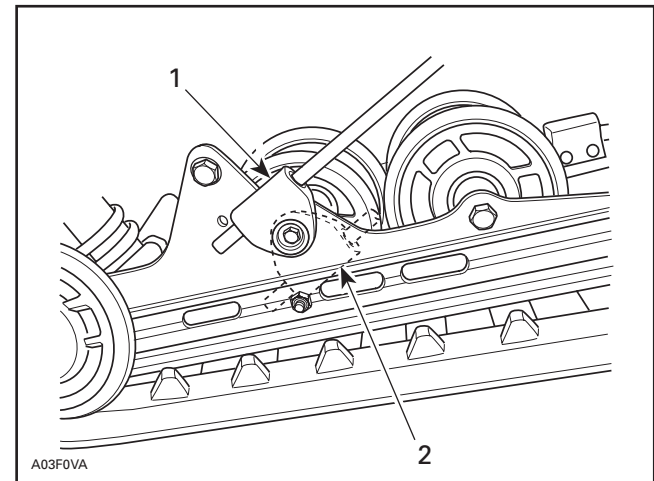
▼ CAUTION

Slider shoes must always be replaced in pairs.

18, Spring Support

▼ CAUTION

To avoid track damage, spring supports must be mounted upward.



RIGHT SIDE SHOWN

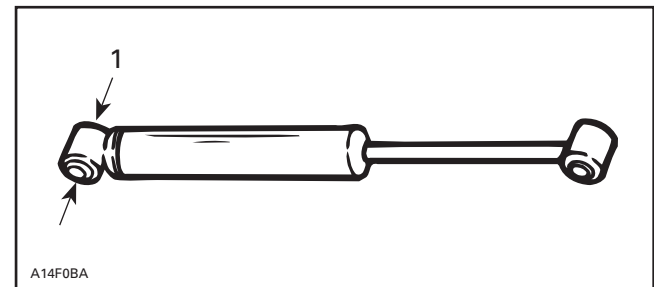
- 1. Right position: upward
- 2. Wrong position

SHOCK ABSORBER INSPECTION

All Models Equipped with Hydraulic Shock

NOTE: Hydraulic shocks are painted black or dark gray.

Secure the shock body end in a vise with its rod upward.



- 1. Clamp

▼ CAUTION

Do not clamp directly on shock body.

Examine each shock for leaks. Extend and compress the piston several times over its entire stroke. Check that it moves smoothly and with uniform resistance with its rod upward.

Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSION)

Pay attention to the following conditions that will denote a defective shock:

- A skip or a hang back when reversing stroke at mid travel.
- Seizing or binding condition except at extreme end of either stroke.
- Oil leakage.
- A gurgling noise, after completing one full compression and extension stroke.

Renew if any faults are present.

All Models Equipped with Gas Pressurized Shock

NOTE: Gas pressurized shocks are light gray painted.

Gas shock can be inspected as follows:

Because of gas pressure, strong resistance is felt when compressing shock. When released, the shock will extend unassisted. Renew as required.

If suspecting an internal gas leak between oil chamber and gas chamber, check shock as follows:

Install shock in a vise clamping on its bottom eyelet with its rod upward.

Let it stand for 5 minutes.

Completely push down the shock rod then release.

Rod must come out at a steady speed. If speed suddenly increases particularly at end of extension, replace shock.

If suspecting a frozen gas shock proceed as follows:

Place shock in a freezer (temperature below 0°C (32°F)) for 4 hours.

Push down on rod and note its resistance, compare to a new shock. If shock is frozen it will be much more difficult to compress than for the new one.

INSTALLATION

Install assembled suspension into track with front portion first.

Insert rear portion of suspension into track.

Bolt front arm, rear arm then center top idler wheel axle.

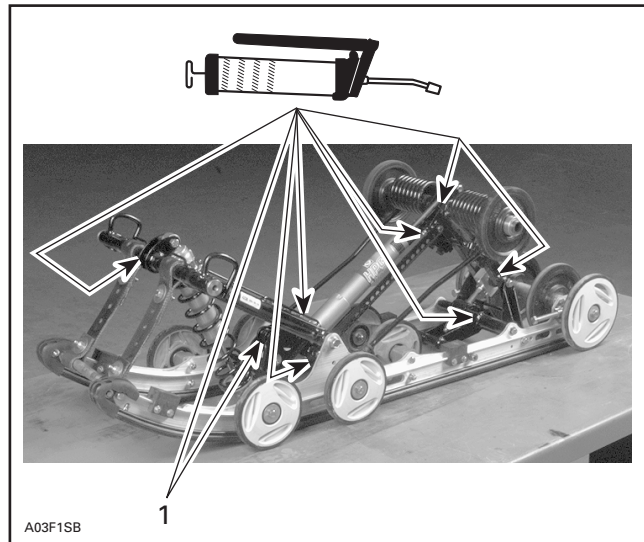
Adjust track tension.

RIDE ADJUSTMENT

Refer to *Operator's Guide*.

LUBRICATION

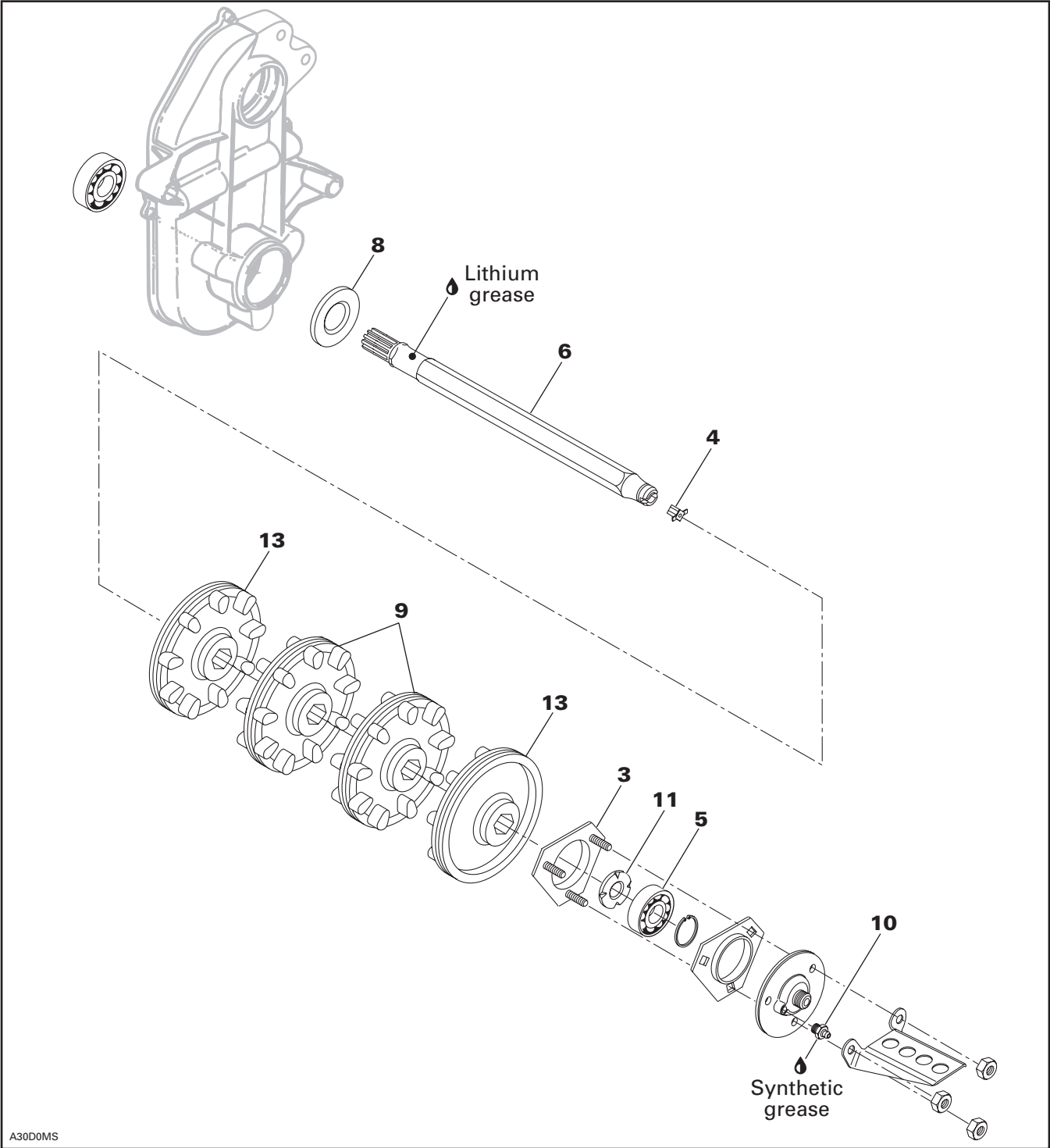
Lubricate front and rear arms at grease fittings using synthetic grease (P/N 413 711 500).



SC-10 HP: 7 GREASE FITTINGS

1. Only the GT 700/SE and all LT versions have this 8th grease fitting

DRIVE AXLE



A30D0MS

Section 07 REAR SUSPENSION

Subsection 03 (DRIVE AXLE)

REMOVAL

Drain oil from chaincase. Release drive chain tension. Remove chaincase cover.

Raise and block rear of vehicle off the ground.

Remove suspension. Refer to SC-10 SUSPENSION 07-02.

2,8, End Bearing Housing and Seal

Remove outer flange cover of bearing housing.

Remove chain and sprocket then circlip and bearing from drive axle.

Pry oil seal from chaincase.

6,9,13, Drive Axle and Sprocket

Release drive axle sprocket from track and at the same time, pull the drive axle toward the end bearing housing side.

Remove drive axle from vehicle.

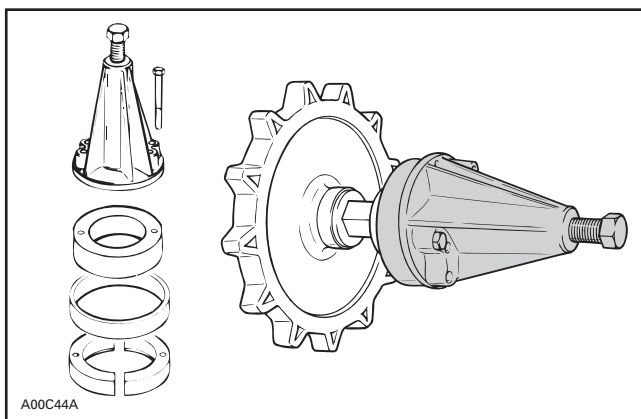
DISASSEMBLY

4, Speedometer Drive Insert

Remove speedometer drive insert.

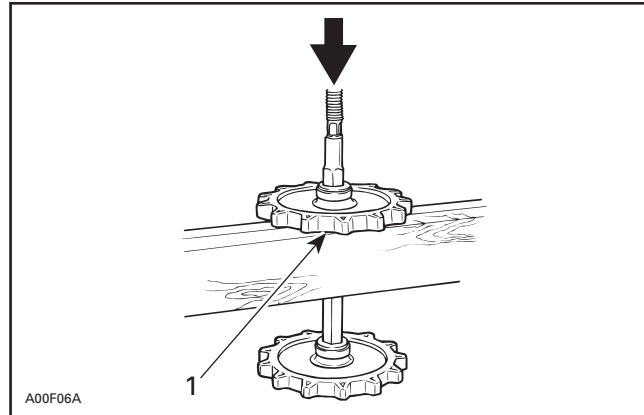
5,12, Bearing

To remove bearings, use puller assembly, ring and half rings as illustrated.



9,13, Sprocket and Half-Sprocket

To remove press fit sprockets, use a press and a suitable support as illustrated.



TYPICAL

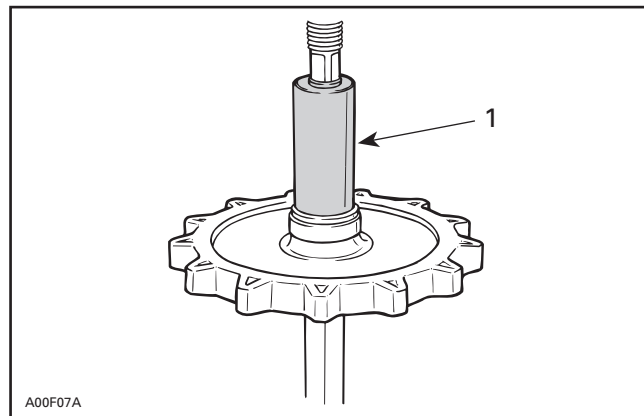
1. Support sprocket near hub

NOTE: Two different types of sprocket press fit can be found. Ensure to replace ring reinforced sprockets with the same type.

ASSEMBLY

8,9,13, Drive Axle and Sprocket

To assemble press fit sprockets, use a press and a suitable pipe as illustrated. Sprockets must be assembled according to the following dimensions.



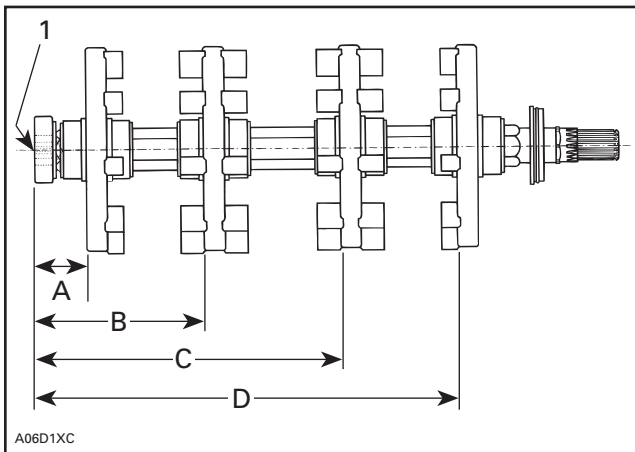
TYPICAL

1. Pipe

Section 07 REAR SUSPENSION

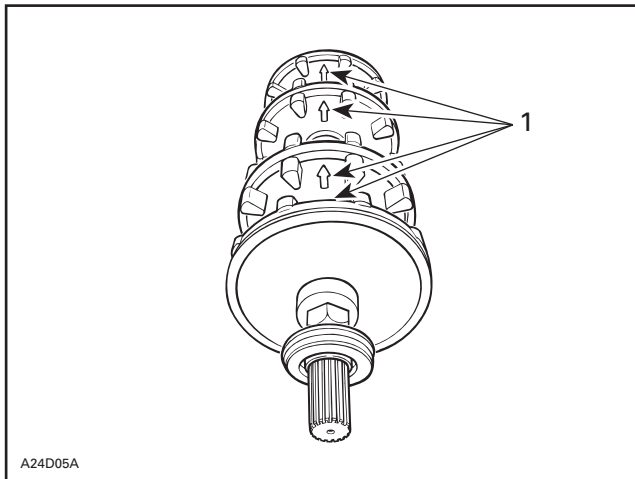
Subsection 03 (DRIVE AXLE)

CK3 Series



1. Measure from end of drive axle
A. 49 mm (1.929 in)
B. 151.2 mm (4.724 in)
C. 274.2 mm (10.795 in)
D. 376.3 mm (14.815 in)

Ensure to align indexing marks of each sprocket when assembling.

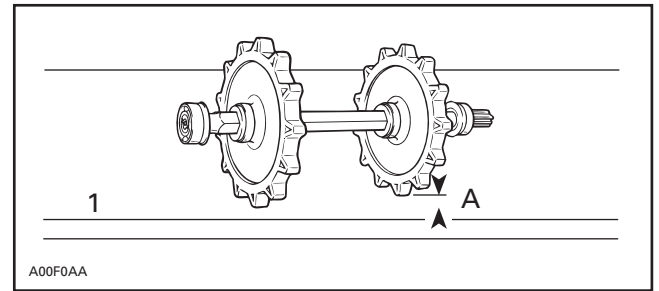


TYPICAL

1. Indexing marks aligned

The maximum desynchronization for the sprockets is 1.5 mm (1/16 in).

To check this tolerance, place axle assembly on a plane surface and measure the gap between sprocket tooth and surface.



1. Plane surface
A. 1.5 mm (1/16 in) MAXIMUM

CAUTION

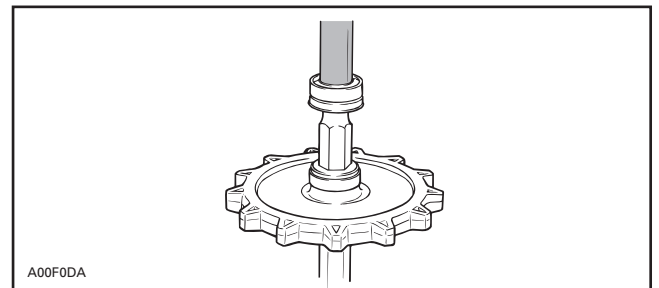
The same sprocket must not be pressed twice on the axle. If synchronization is found to be defective, use a new sprocket.

11, Bearing Protector

At assembly, flat side of bearing protector must be against bearing.

5,12, Bearing

Always push bearing by inner race.



The bearing on the splined side of axle must be pushed until it is seated on shaft shoulder. Each bearing must have its shield facing the sprocket.

Section 07 REAR SUSPENSION

Subsection 03 (DRIVE AXLE)

LUBRICATION

15, Grease Fitting

Lubricate end housing bearing with synthetic grease (P/N 413 711 500).

ADJUSTMENT

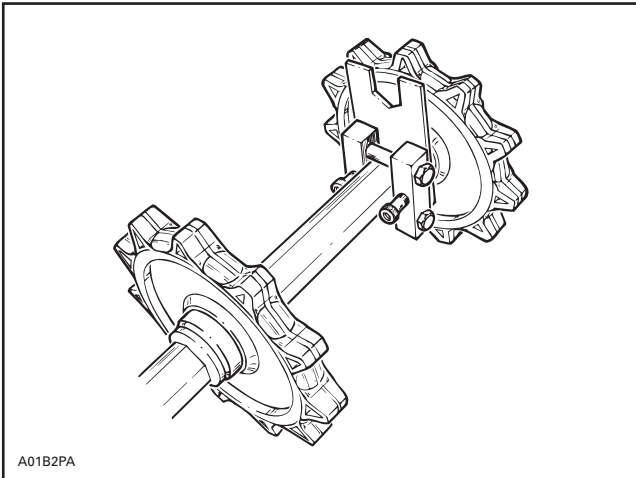
Sprocket/Track Alignment

▼ **CAUTION**

Do not temper with sprocket/track alignment if frame or suspension is damaged.

Sprockets might be repositioned to fit lugs without removing drive axle.

Use drive axle sprocket adjuster kit (P/N 861 725 700).



TYPICAL

TRACK

TRACK TYPE APPLICATION

Refer to TECHNICAL DATA section 10.

GENERAL


This section gives guidelines for track removal. Some components require more detailed disassembly procedures. In these particular cases, refer to the pertaining section in this manual.

INSPECTION

Visually inspect track for:

- cuts and abnormal wear
- broken rods
- broken or missing track cleats

If track is damaged or rods are broken, replace track. For damaged or missing cleats, replace by new ones, using cleat remover (P/N 529 028 700). Use small-cleat installer (P/N 529 008 500).

 <b style="font-size: 1.2em;">WARNING
<p>Do not operate a snowmobile with a cut, torn or damaged track.</p>

REMOVAL

Remove the following parts:

- speedometer cable
- muffler
- chaincase cover
- suspension
- drive axle seal
- end bearing housing
- sprockets and chain
- drive axle (toward end bearing housing)
- track

INSTALLATION

Reverse the removal procedure.

NOTE: When installing the track, respect rotation direction indicated by an arrow on track thread.

Check sprocket/track alignment as described in DRIVE AXLE 07-03.

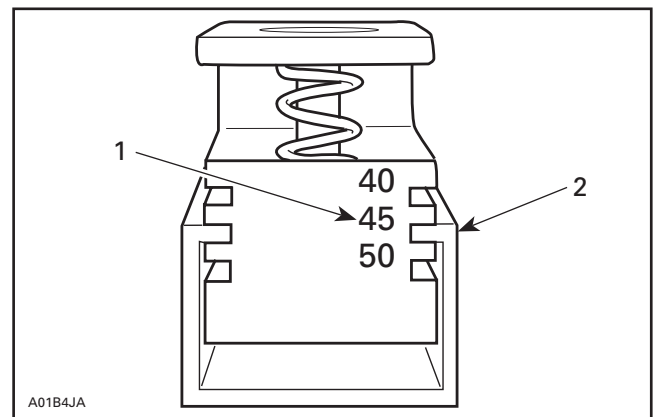
Track Tension and Alignment

Track tension and alignment are inter-related. Do not adjust one without checking the other. Track tension procedure must be carried out prior to track alignment.

Tension

Lift the rear of vehicle and support with a mechanical stand. Allow the slide to extend normally. Check the gap half-way between front and rear idler wheels. Measure between slider shoe and bottom inside of track.

When using the track tension gauge (P/N 529 021 500), slide U shape extrusion to proper deflection.

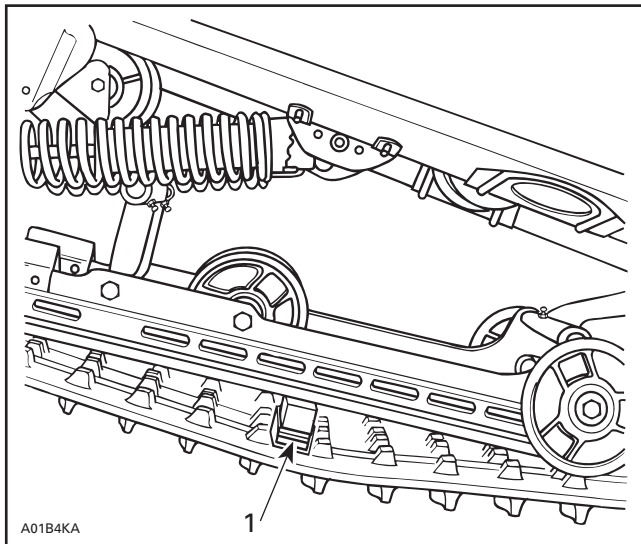


1. Example: 45 mm
2. Extrusion

Insert pre-settled gauge between slider shoe and track. Allow gauge to settle by forcing track up and down. Track tension is as specified when edge of gauge reaches line.

Section 07 REAR SUSPENSION

Subsection 04 (TRACK)



TYPICAL

1. Line

NOTE: Lightly oil track tension gauge center pin to avoid sticking.

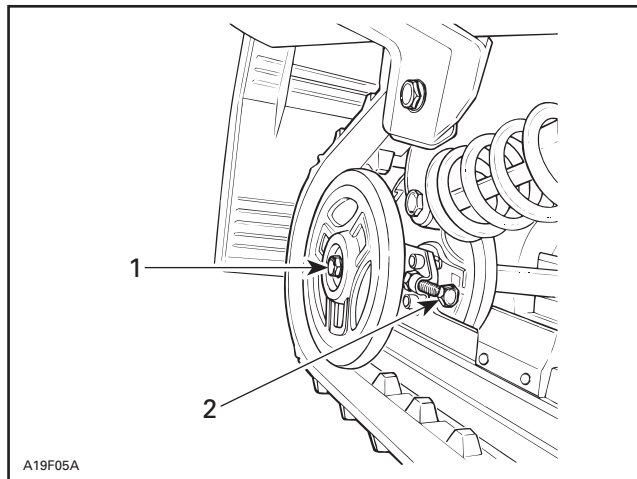
All Models

Refer to TECHNICAL DATA 10 for proper tension values.

CAUTION

Too much tension will result in power loss and excessive stress on suspension components. If too loose, the track will have a tendency to thump.

To adjust, loosen the rear idler wheel retaining screws then loosen or tighten the adjuster bolts located on the inner side of the rear idler wheels.



TYPICAL

1. Retaining screw
2. Adjuster bolt

Alignment

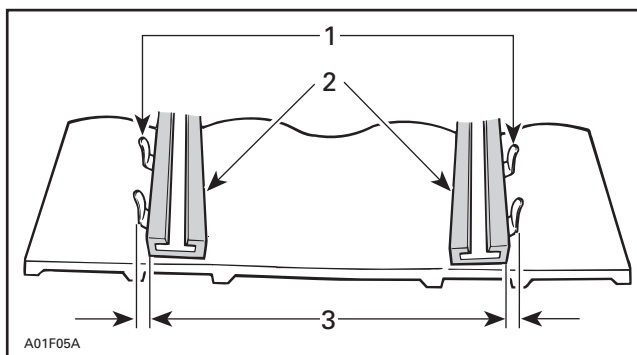
WARNING

Before checking track tension, ensure that the track is free of all particles which could be thrown out while it is rotating. Keep hands, tools, feet and clothing clear of track. Ensure no one is standing in close proximity to the vehicle.

All Models

With rear of vehicle supported off the ground, start engine and allow the track to rotate **slowly**.

Check that the track is well centered; equal distance on both sides between edges of track guides and slider shoes.

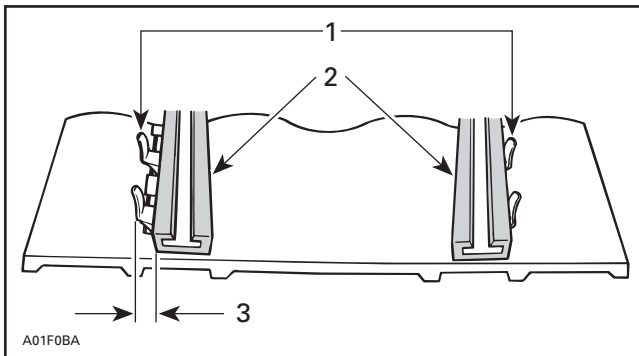


1. Guides
2. Slider shoes
3. Equal distance

◆ WARNING

Before checking track alignment, ensure that the track is free of all particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track.

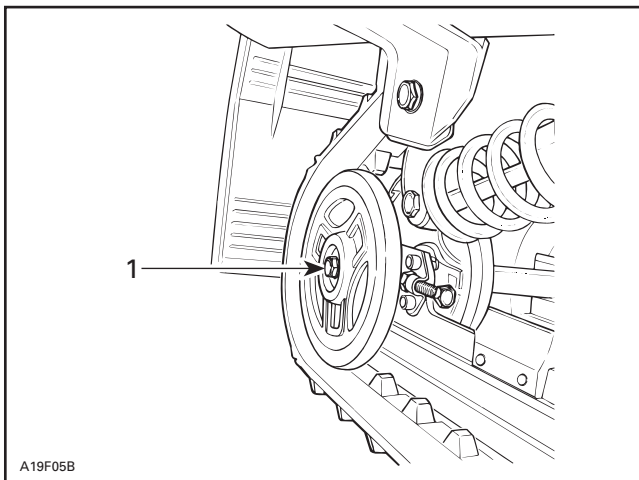
To correct, stop engine then tighten the adjuster bolt on side where guides are farthest to slide. Re-check alignment.



1. Guides
2. Slider shoes
3. Tighten on this side

NOTE: Torque retaining screw to 48 N•m (35 lbf•ft) after adjustment.

Tighten the idler wheel retaining screws.



TYPICAL

1. Retighten

Restart engine, rotate track **slowly** and recheck alignment.

Track Cleat

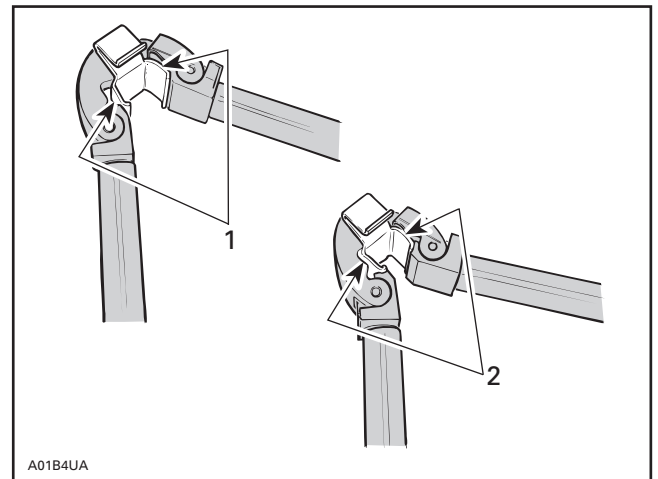
Removal

- Raise rear of vehicle off the ground and lift snow-guard then rotate track to expose a cleat to be replaced.
- Using track cleat remover (P/N 529 008 700) for all models.

Installation

NOTE: Keep the same pitch between guide cleats.

- Place new cleat in position and using small track cleat installer (P/N 529 008 500) bend cleat then push tabs into rubber.



TYPICAL

1. First step
2. Second step (to push tabs into rubber)