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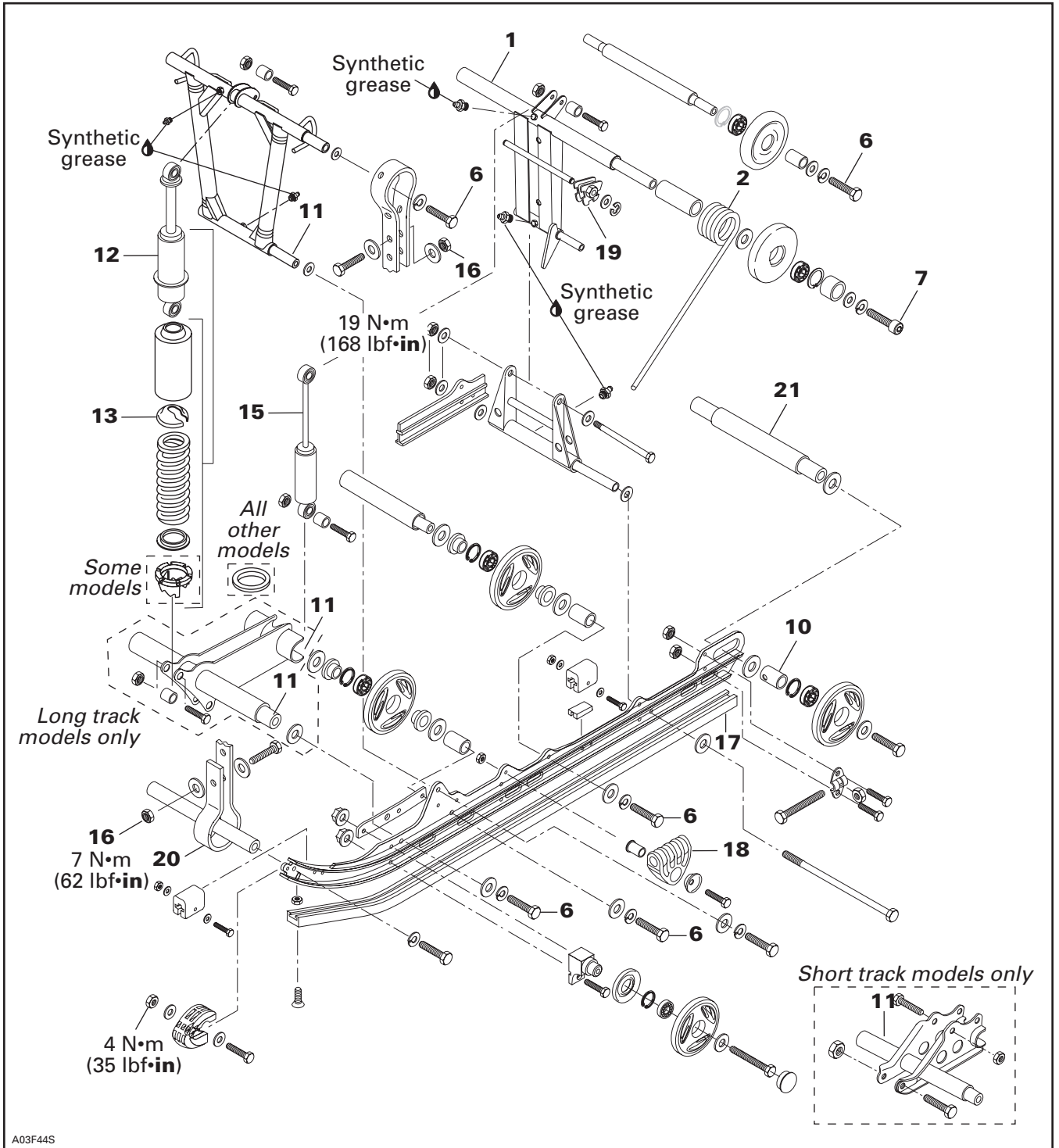
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SC-10 SUSPENSIONS (ALL VERSIONS)

SC-10 Sport on Formula Deluxe Fan 380/500 and MX Z 380/440/500

SC-10 Touring on Touring Fan 380/500

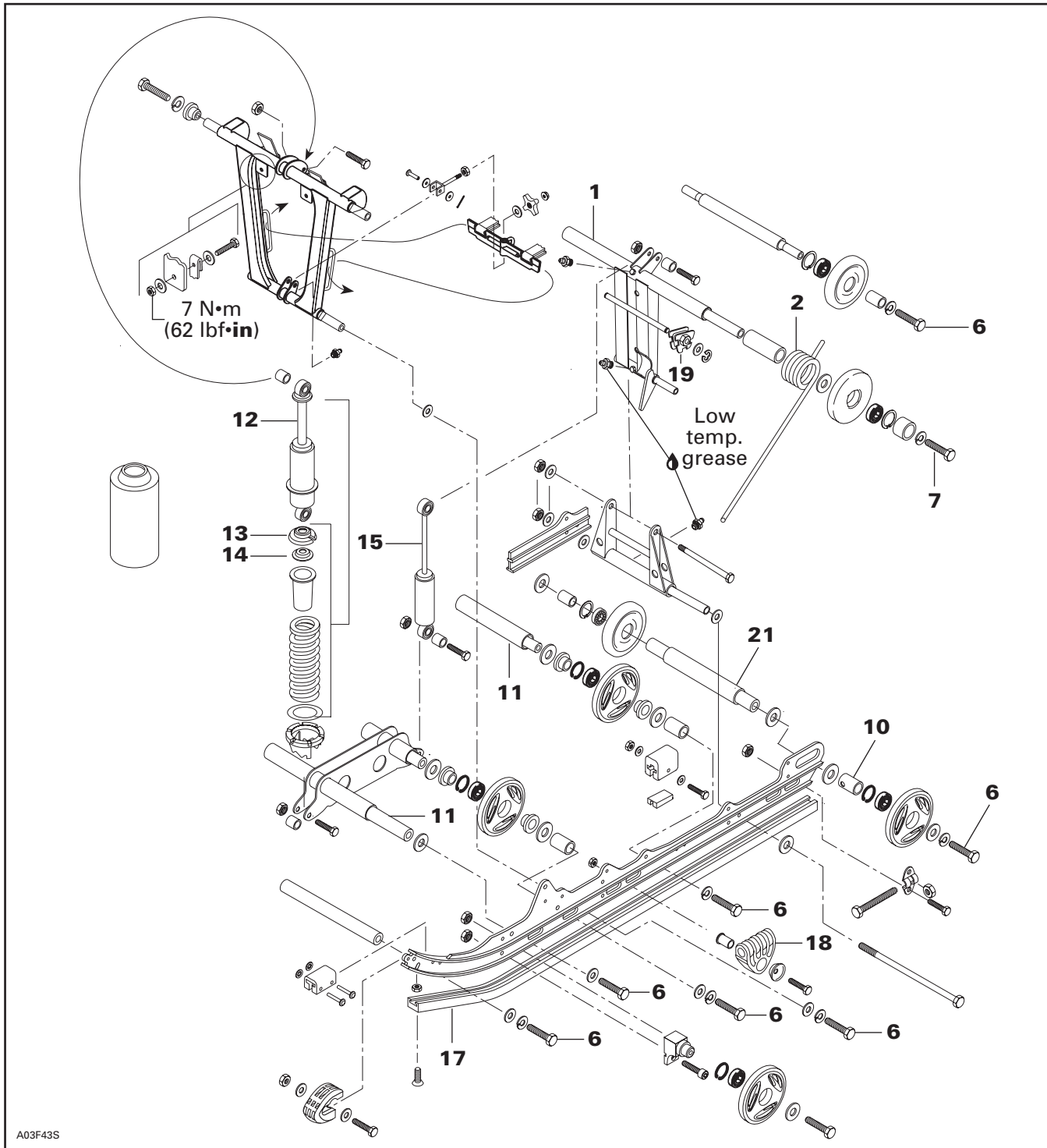


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Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSIONS (ALL VERSIONS))

SC-10 Mountain on Summit Fan 500



COMPONENT REMOVAL AND INSTALLATION

Lift rear of vehicle and support it off the ground.

21, Rear Axle

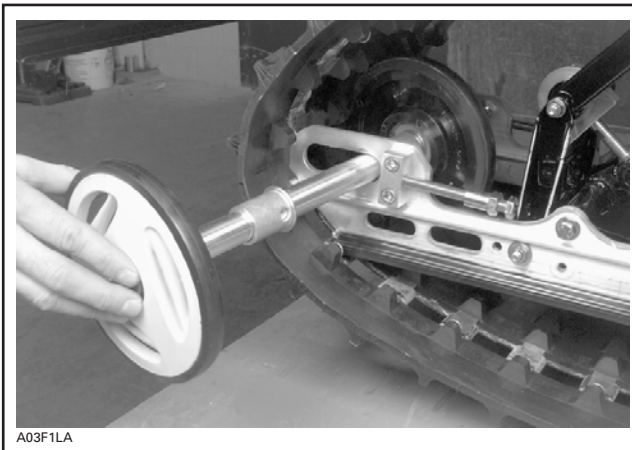
Remove screw on rear axle on side of offset wheel.

Completely loosen track tension.

Pull out rear axle from opposite side of offset inner wheel.

At assembly, align spacer hole with adjusting bolt.

Make sure to reinstall washer on each side of runner.

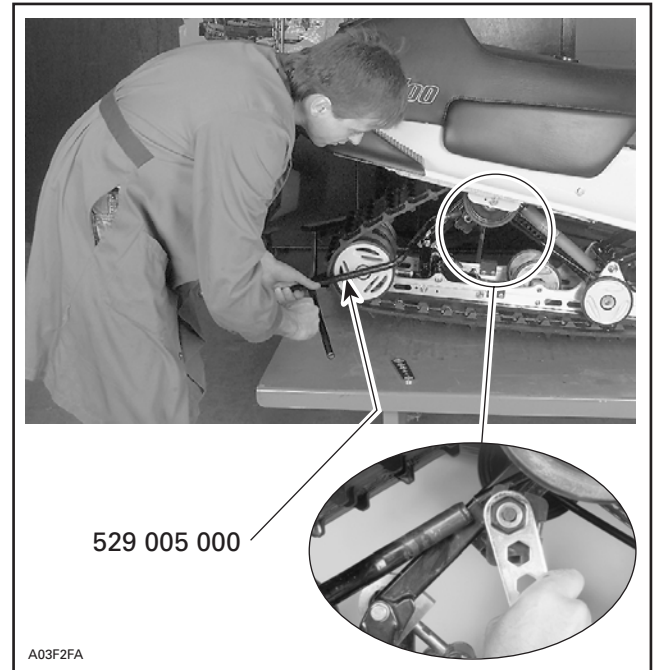


TYPICAL

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.

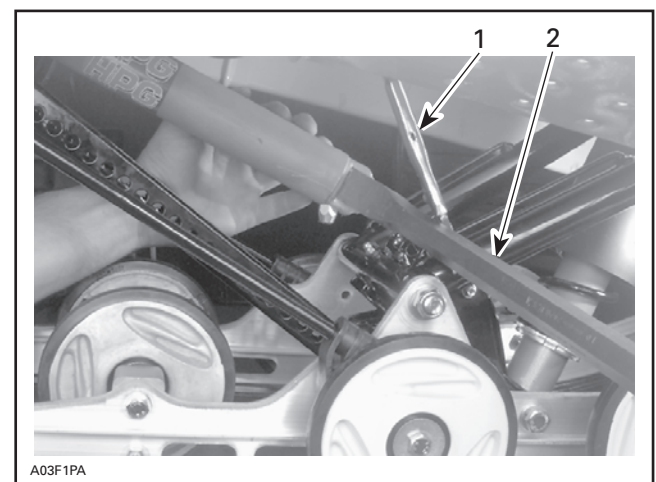


Remove nut on top end of shock.

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

Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSIONS (ALL VERSIONS))

12, Front Shock

All Models

Unfasten one end of stopper strap(s).
Unbolt shock and remove it.

2, Rear Spring

All Models

Remove spring ends from adjusting cams.
Unbolt rear arm top axle from chassis.

All Liquid Cooled Models

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

Remove spacers and top idler wheels.

Remove springs.

6,7, Self-Locking Screws

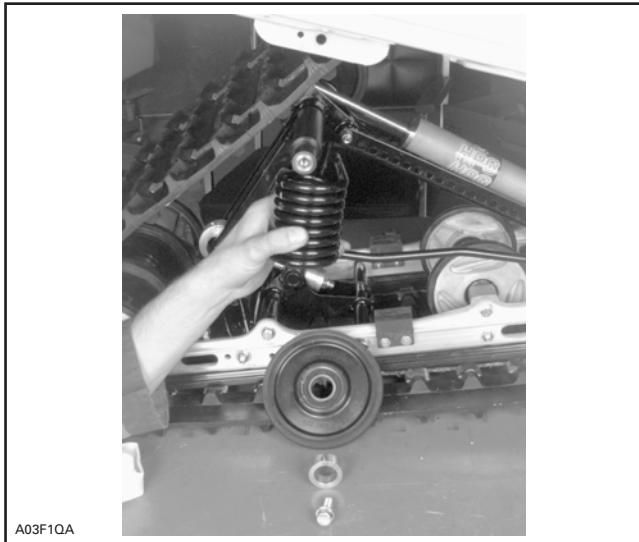
CAUTION: These self-locking screws must always be replaced by new ones everytime they are removed.

NOTE: To prevent axle from turning when unscrewing self-locking screws, proceed as follows:

- Knock on screw head and/or heat to break threadlocker bond.
- Remove one self-locking screw then install a 10 mm shorter non-self-locking one in place.
- Remove the opposite self-locking screw.
- Remove the temporary installed non-self-locking screw.

Unscrew center idler wheel axle from tunnel then remove.

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



TYPICAL

At reassembly, respect THIS SIDE OUT inscription on wheel.

SUSPENSION ASS'Y REMOVAL

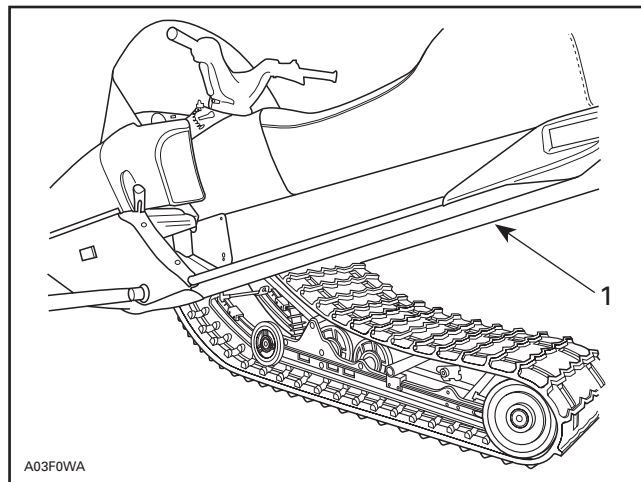
19, Cam

Decrease spring preload by turning cams accordingly.

Lift rear of vehicle and support it off the ground.

Loosen track tension.

Remove rear arm top axle screws **no. 7** from chassis.



1. At least 1 m (3 ft)

Remove both screws **no. 6** retaining front arm to tunnel.

Remove suspension.

Section 07 REAR SUSPENSION

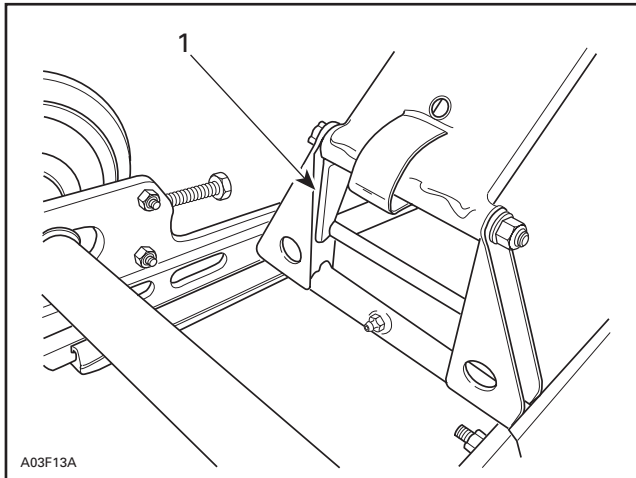
Subsection 02 (SC-10 SUSPENSIONS (ALL VERSIONS))

DISASSEMBLY AND ASSEMBLY

Inspect track thoroughly before reinstalling suspension. Refer to TRACK.

1, Rear Arm

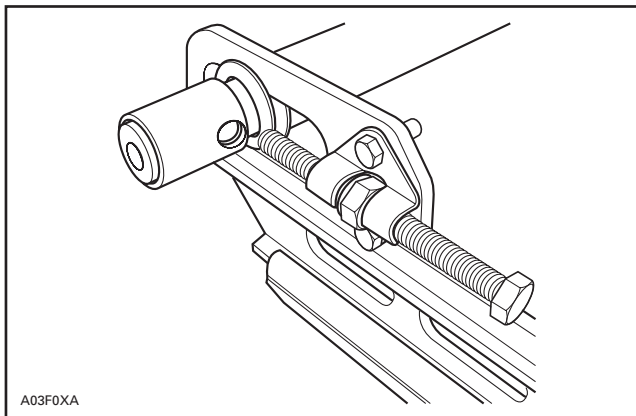
At installation, rear arm stroke limiter must be on rear side.



1. Stroke limiter on rear side

10, Outer Bushing

At installation, hole must face adjustment screw.



A03F0XA

11, Axle

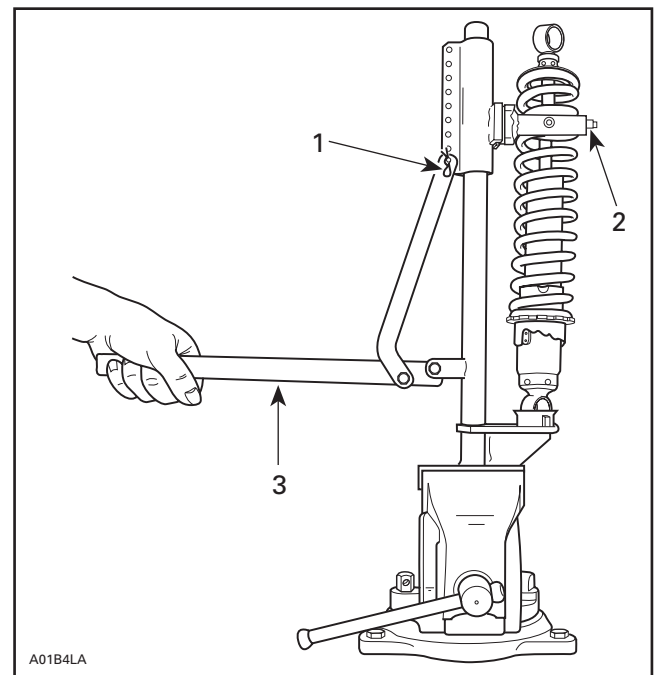
Note position of axles at disassembly. Axles with a paint stripe serve as idler wheel axles. These are more precise than those used as pivot axles. Idler wheel axles can be used as pivot axles but the opposite is not true.

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

Use shock spring remover (P/N 529 035 504) and put it in a vise. Mount shock in it and turn shock so that spring coils matched 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.

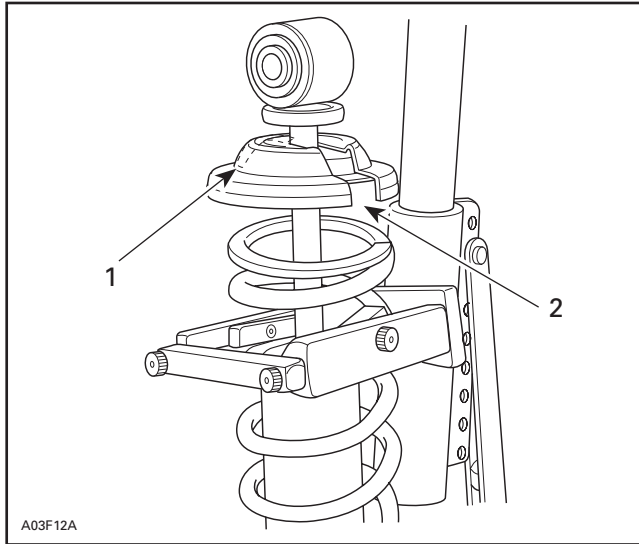


1. Clevis pin
2. Bar
3. Handle horizontal

Section 07 REAR SUSPENSION

Subsection 02 (SC-10 SUSPENSIONS (ALL VERSIONS))

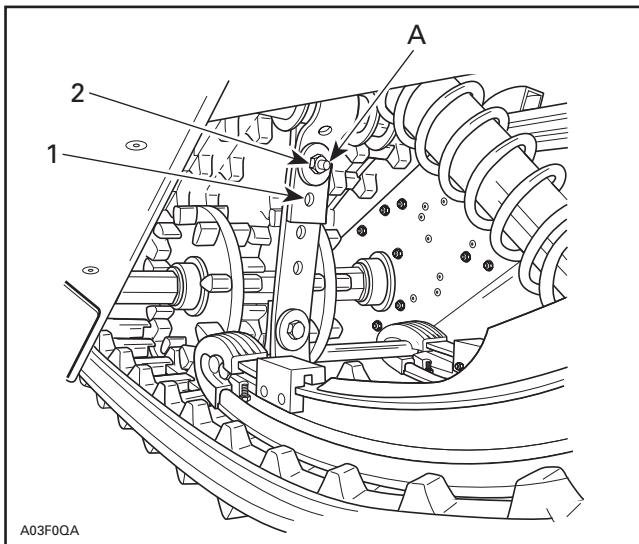
At installation, cap opening must be 180° from spring stopper opening.



1. Cap opening
2. Spring stopper opening

20, Stopper Strap

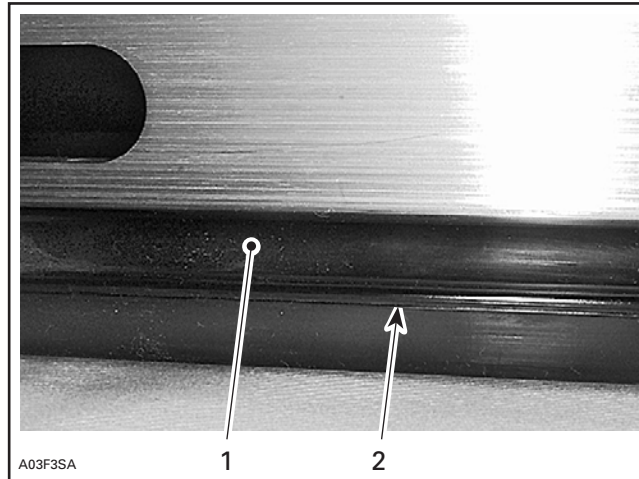
Inspect strap for wear or cracks, bolt and nut for tightness. If loose, inspect hole for deformation. Replace as required. Make sure it is attached through proper hole from the end. Refer to TECHNICAL DATA. Torque nut to 7 N•m (62 lbf•in).



1. 1st hole
2. 2nd hole
- A. 7 N•m (62 lbf•in)

17, Slider Shoe

Molding line is the wear limit indicator.



TYPICAL

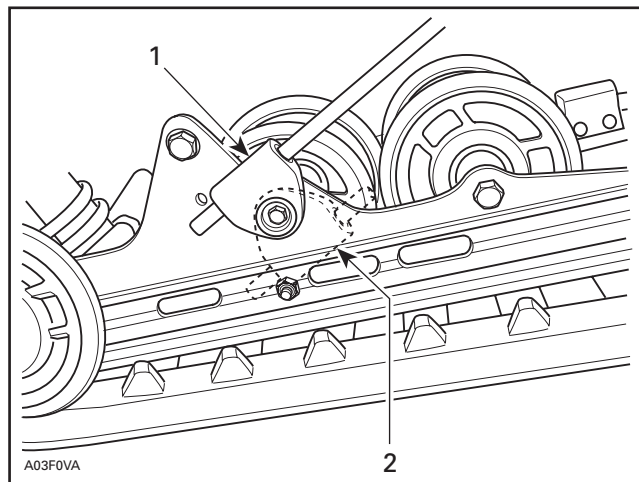
1. Slider shoe
2. Molding line (wear limit indicator)

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

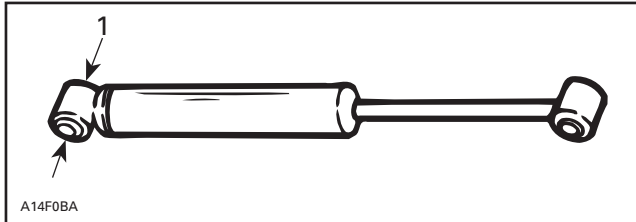
1. Right position: upward
2. Wrong position

SHOCK ABSORBER INSPECTION

All Models Equipped with Hydraulic Shock

NOTE: Hydraulic shocks are black painted.

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.

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 or purple painted, or bare aluminum.

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.

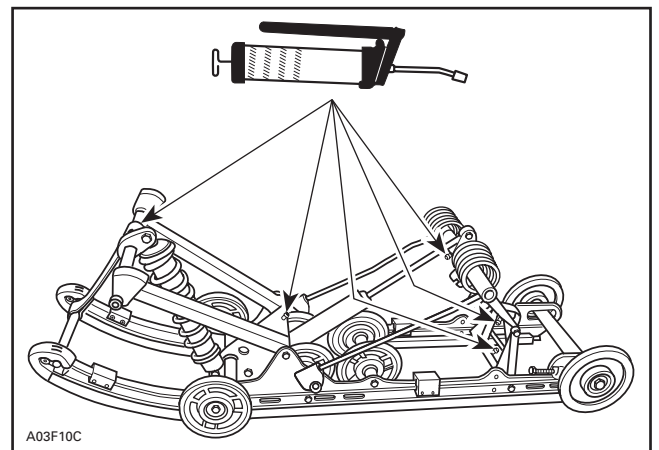
Adjust track tension.

RIDE ADJUSTMENT

Refer to *Operator's Guide*.

LUBRICATION

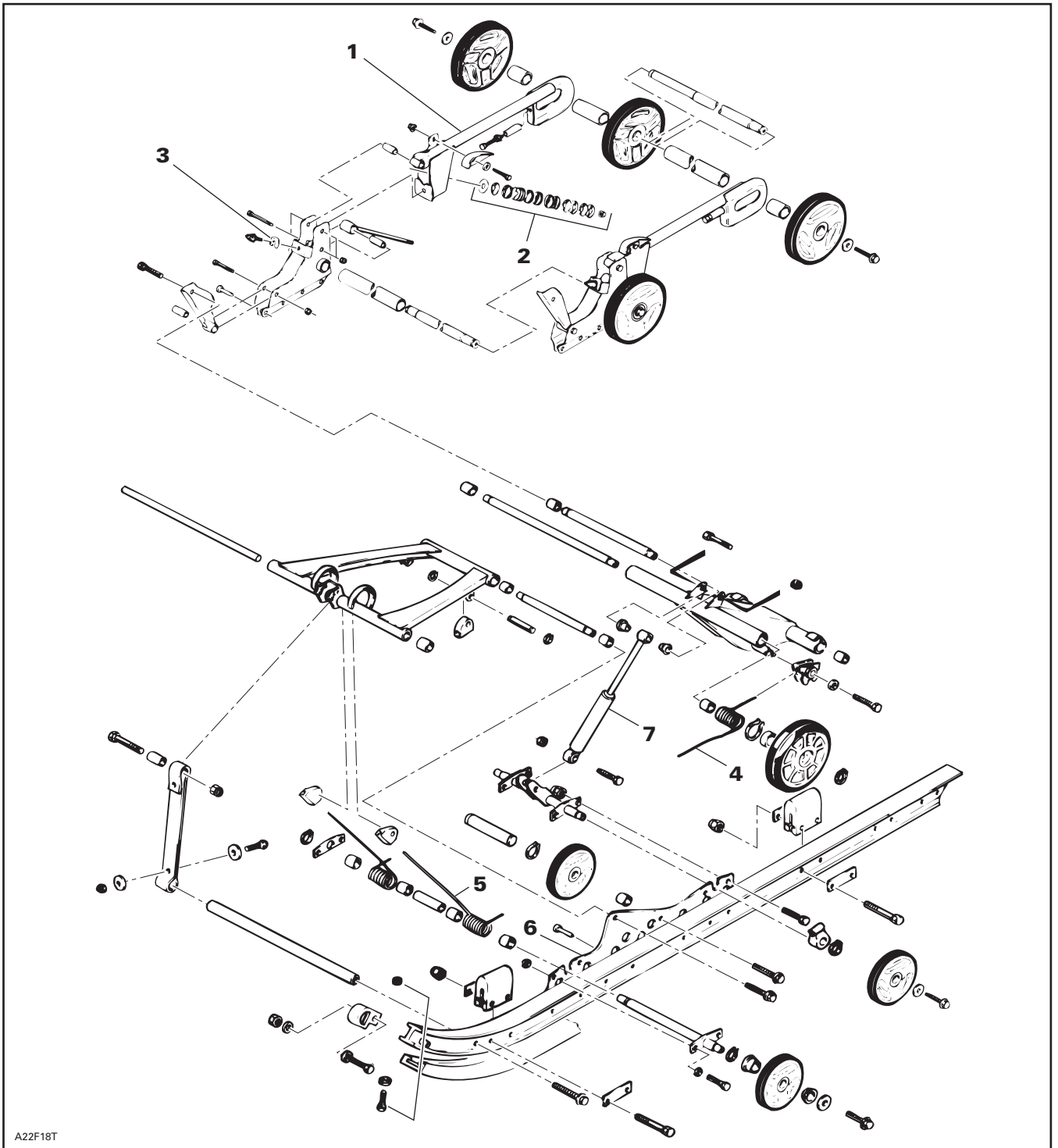
Lubricate front and rear arms at grease fittings using synthetic grease (P/N 413 711 500).



SC-10 SPORT, MOUNTAIN AND TOURING: 5 GREASE FITTINGS

SKANDIC WT SUSPENSION

Skandic LT/WT/SWT/WT LC



A22F18T

TYPICAL

Section 07 REAR SUSPENSION

Subsection 03 (SKANDIC WT SUSPENSION)

REMOVAL

Release track tension.

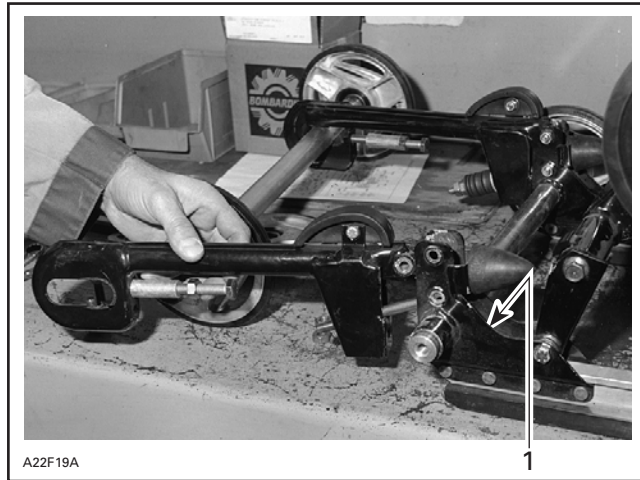
Lift rear of vehicle and support it off the ground.

Unbolt front arm then rear arm.

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

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

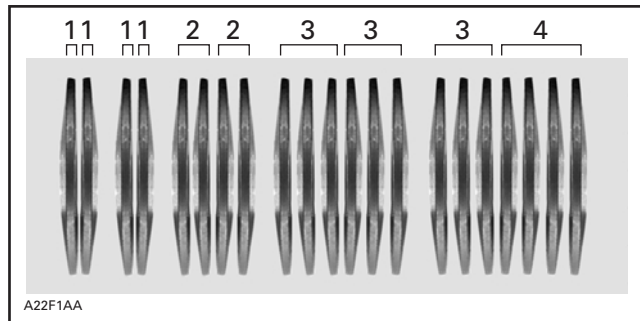
Remove suspension assembly.



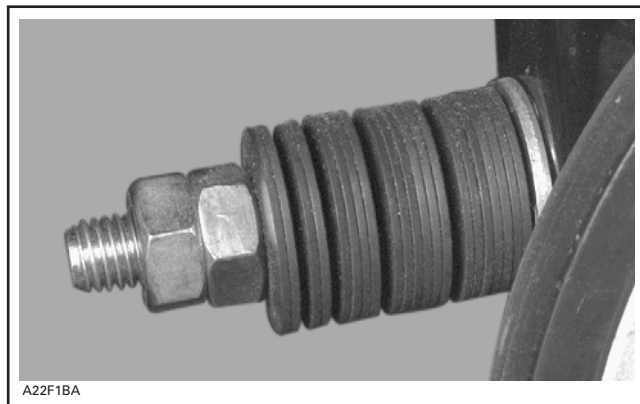
1. Support

2, Conical Washer

At installation, position conical washers as shown.



WASHER QUANTITY AND MOUNTING POSITION



Tighten nut 3/4 turn after contacting washers for better deep snow performance. Maximum pre-load is 3 turns after nut touching washers. This last adjustment is for trail riding with or without a load and for pulling a load.



DISASSEMBLY AND ASSEMBLY

1, Extension

Remove nuts and conical washers from the eye bolt adjuster. Remove bolt retaining eye bolt adjuster to support.

Remove rear idler wheel on appropriate side.

Remove idler wheel from support.

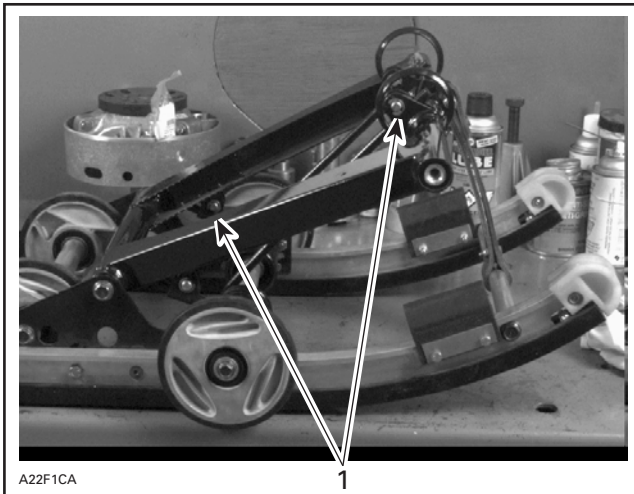
Unbolt extension from its support.

4, Rear Spring

Remove top idler wheels.
Unscrew one end of shock.
Remove spring.

5, Front Spring

Remove circlips retaining spring support to top and bottom of front arm.
Holding spring end, remove lock pin of top spring support then bottom support lock pin.
Unbolt front idler wheel axle.
Remove idler wheel on side where axle retaining plate is not welded.
Remove springs.

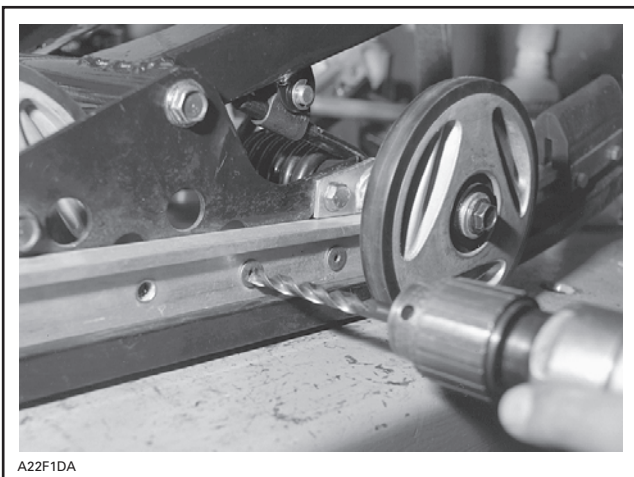


A22F1CA

1. Circlips

6, Support Plate

Drill rivets to remove support plate. Use a 8 mm (21/64 in) drill bit.



A22F1DA

Rivets can be substituted by M8 x 20 bolts and nuts.

3, Horse-Shoe Washer

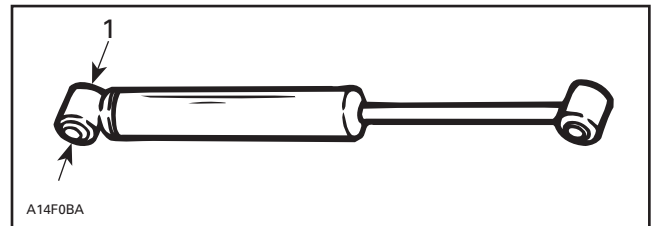
For deep snow riding, do not install washer.
For trail riding with passenger and/or weight, install 1 washer under each rubber stoppers.
For trail riding with heavy load and/or pulling a load, use 2 washers under each rubber stoppers.

7, Shock

Install shock with its rod upward.

SHOCK ABSORBER SERVICING

Secure the shock body end in a vise.



A14F0BA

TYPICAL

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 then check that it moves smoothly and with uniform resistance.

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

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

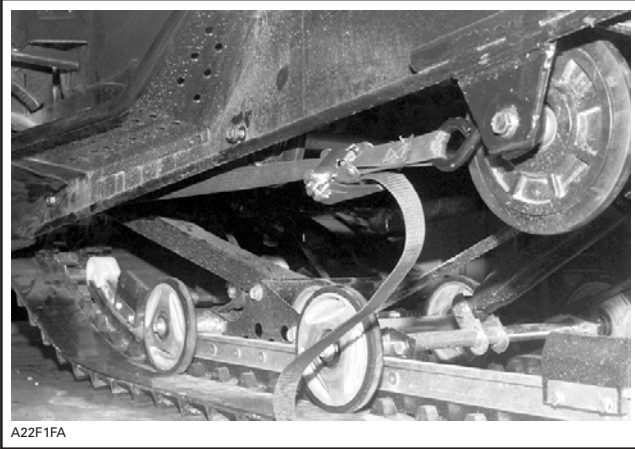
Renew if any fault is present.

Section 07 REAR SUSPENSION

Subsection 03 (SKANDIC WT SUSPENSION)

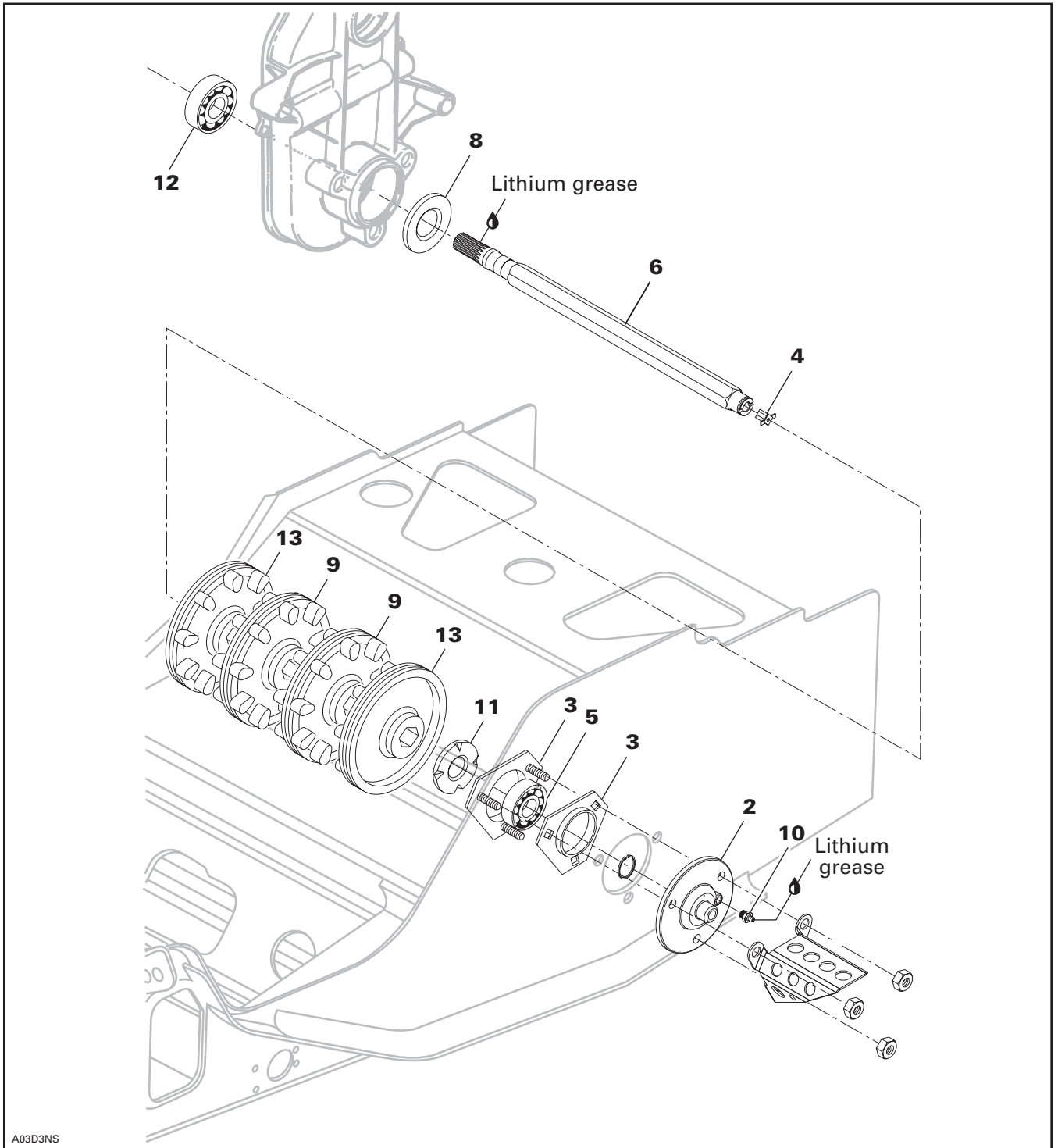
INSTALLATION

Use a tie-down between front arm and spring axle to ease installation of front arm screws.



DRIVE AXLE

S-Series and Skandic LT



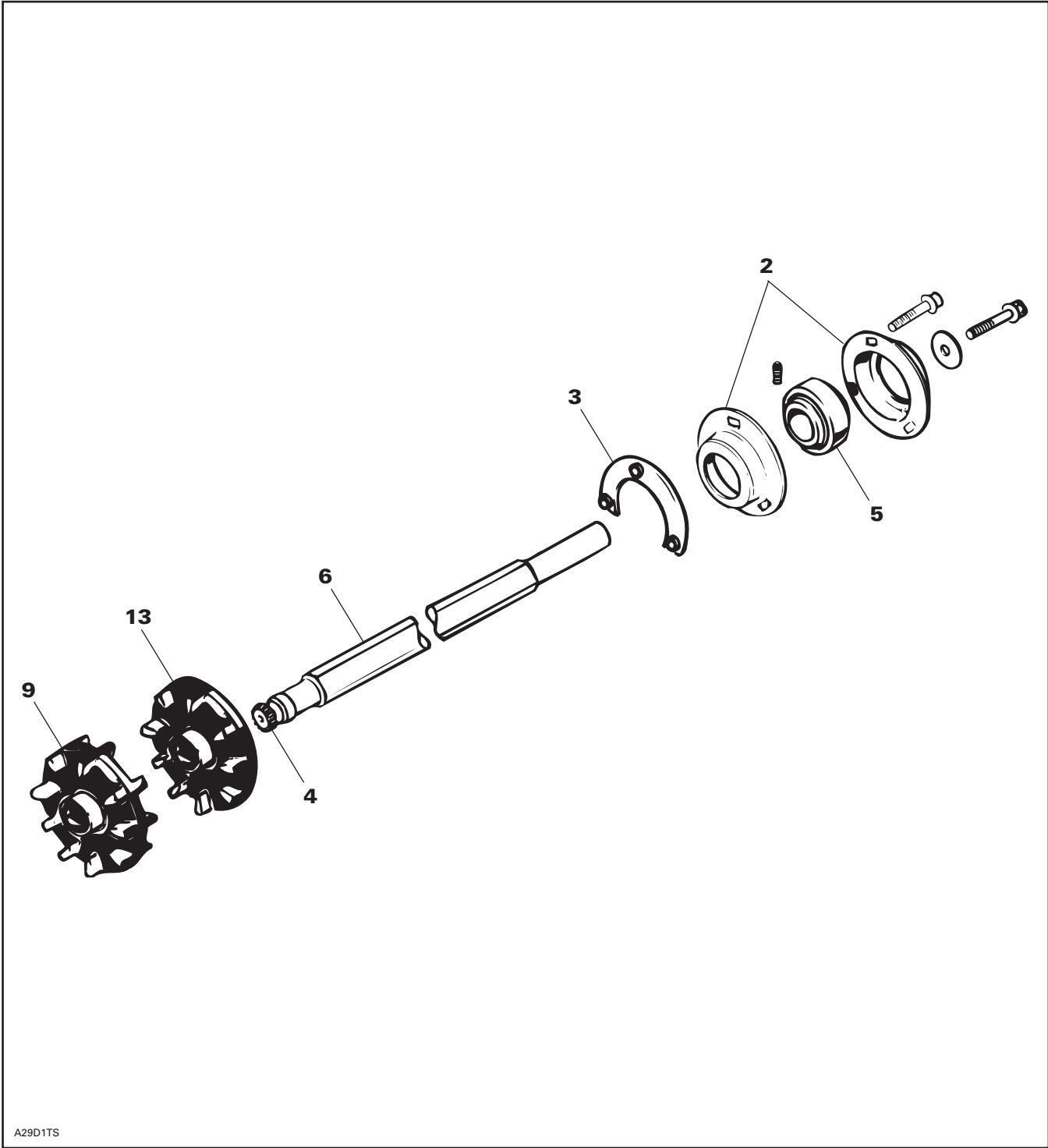
A03D3NS

TYPICAL

Section 07 REAR SUSPENSION

Subsection 04 (DRIVE AXLE)

Skandic WT/SWT/WT LC



A29D1TS

REMOVAL

All Models Except Skandic WT/SWT/WT LC

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

Raise and block rear of vehicle off the ground.

Remove suspension. Refer to SUSPENSION.

2,8, End Bearing Housing and Seal

Remove speedometer cable, cable protector, and plastic bearing cover. Remove circlip from drive axle.

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

Pry oil seals from chaincase and end bearing housing.

6,9,13, Drive Axle and Sprocket

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

Remove drive axle from vehicle.

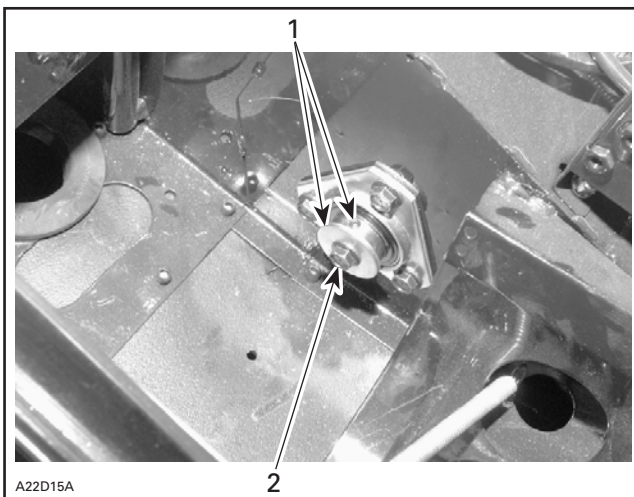
Skandic WT/SWT/WT LC Only

Drain gearbox.

Raise and block rear of vehicle off the ground.

Remove suspension. Refer to SKANDIC WT SUSPENSION.

Remove muffler. Unfasten screw from drive axle end. Loosen both Allen screws from end bearing.



- 1. Allen screws
- 2. Screw

Remove 3 screws retaining end bearing then remove inner plate.

Remove drive axle.

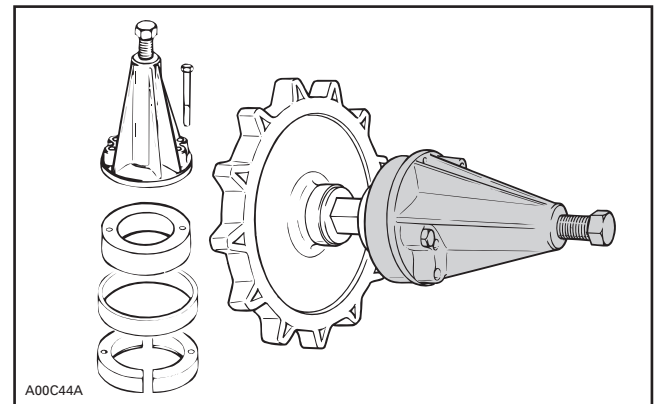
DISASSEMBLY

4, Speedometer Drive Insert

Remove speedometer drive insert.

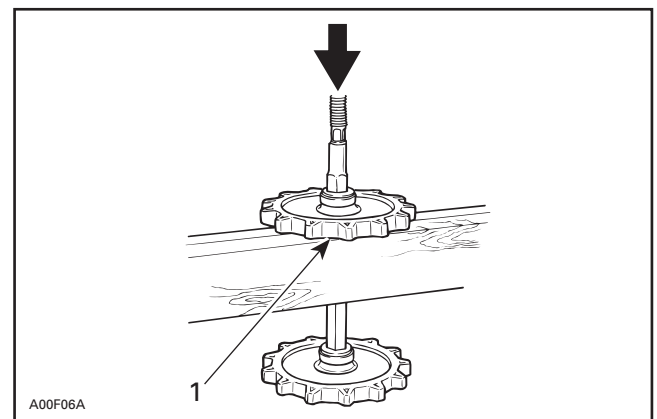
5,12, Bearing

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.

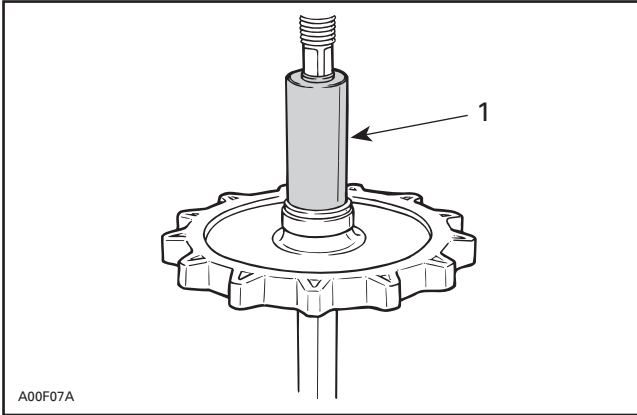
Section 07 REAR SUSPENSION

Subsection 04 (DRIVE AXLE)

ASSEMBLY

8,9,13, Drive Axle and Sprocket

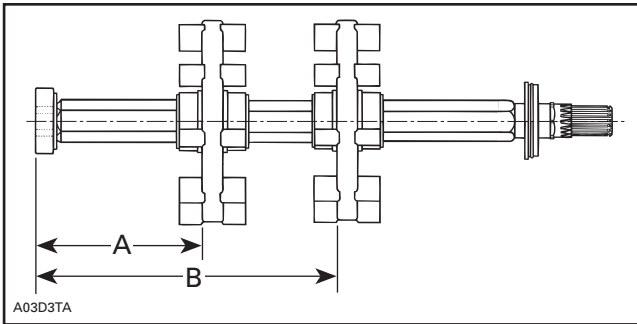
To assemble press fit sprockets, use a press and a suitable pipe as illustrated. Sprockets must be assembled according to the following dimensions.



A00F07A

1. Pipe

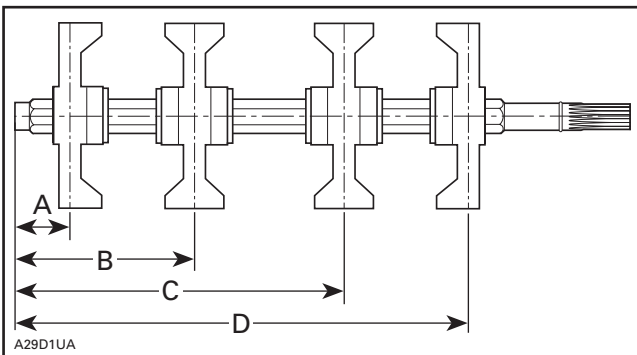
S-Series



A03D37A

A. 151.2 mm (5.953 in)
B. 274.2 mm (10.795 in)

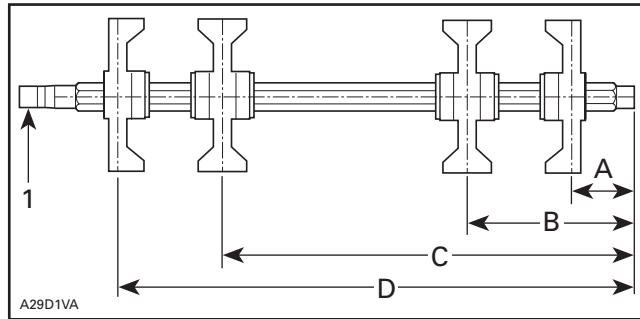
Skandic LT



A29D1UA

A. 47.0 mm (1.850 in)
B. 148.0 mm (5.827 in)
C. 271.0 mm (10.669 in)
D. 372.0 mm (14.646 in)

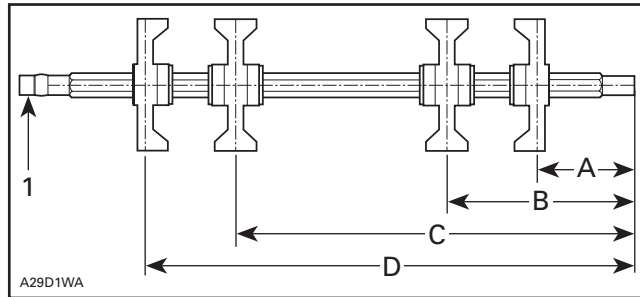
Skandic WT/WT LC



A29D1VA

1. Gearbox side
A. 55.0 mm (2.165 in)
B. 157.0 mm (6.181 in)
C. 399.0 mm (15.709 in)
D. 501.0 mm (19.724 in)

Skandic SWT

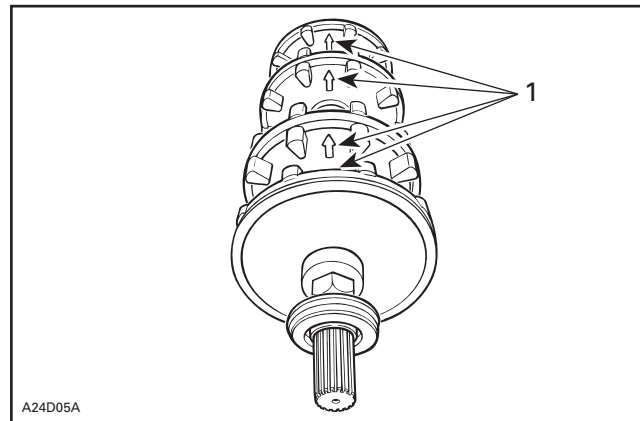


A29D1WA

1. Gearbox side
A. 105.0 mm (4.016 in)
B. 207.0 mm (8.150 in)
C. 449.0 mm (17.677 in)
D. 551.0 mm (21.693 in)

All Models

Ensure to align indexing marks of each sprocket when assembling.



A24D05A

TYPICAL

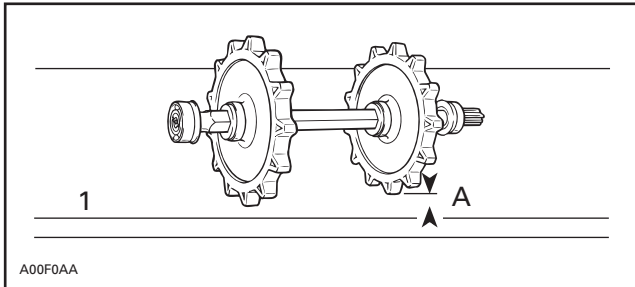
1. Indexing marks aligned

Section 07 REAR SUSPENSION

Subsection 04 (DRIVE AXLE)

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.

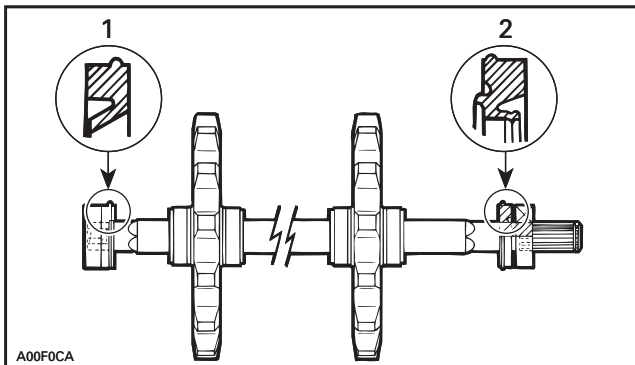


1. Plane surface
- A. 1.5 mm (1/16 in) MAXIMUM

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

6,8, Drive Axle and Seal

When assembling drive axle, always position a new seal on each end of drive axle (if applicable). Locate seal lip as illustrated.



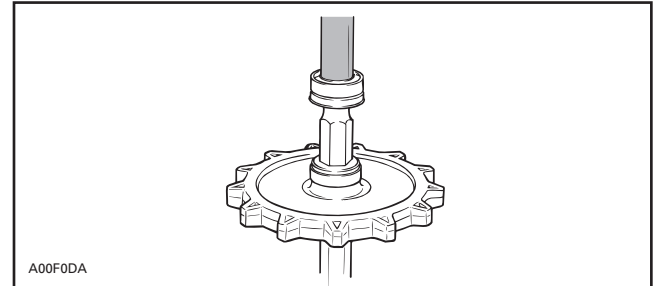
1. Grease seal type
2. Oil seal type

11, Bearing Protector

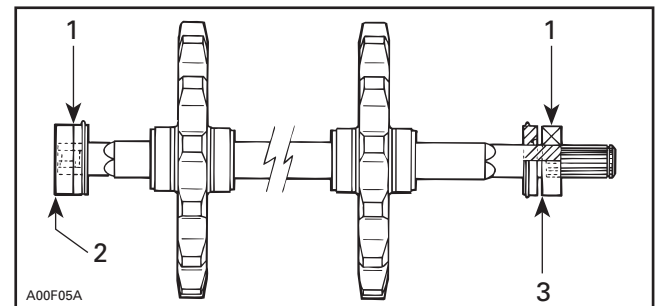
At assembly, flat side of bearing protector must be against bearing.

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. The end bearing housing bearing must be flush with end of drive axle. Each bearing must have its shield facing the sprocket.



1. Bearing shield on this side
2. Flush with drive axle
3. Seated on shaft shoulder

INSTALLATION

4, Speedometer Drive Insert

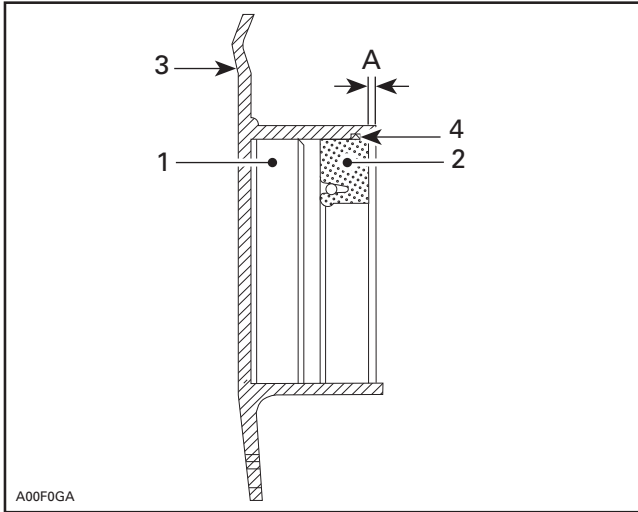
If the drive axle to be installed is a new part and the vehicle is equipped with a speedometer, a correct size speedometer drive insert must be installed into the axle end. Ensure that insert is flush with end of axle.

Position drive axle assembly into location. Install end bearing housing. Install spacer (if applicable) between bearing and lower chaincase sprocket.

Section 07 REAR SUSPENSION

Subsection 04 (DRIVE AXLE)

Install chaincase and position seals (if applicable), making sure that a gap of approximately 2 mm (1/16 in) exists between end of bearing housing and each seal.



SIDE VIEW

1. Bearing
 2. Seal
 3. Housing
 4. Seal lip
- A. 2 mm (.080 in) approximately

3, Retainer Ring

Make sure that welded nuts are toward inside of tunnel.

Lock drive axle sprocket with a circlip.

Reinstall the chaincase cover.

Refill with chaincase oil. Refer to TECHNICAL DATA.

Install the suspension. Refer to TRACK and adjust track tension and carry out track alignment procedure.

LUBRICATION

15, Grease Fitting

Lubricate end housing bearing with synthetic grease (P/N 513 711 500).

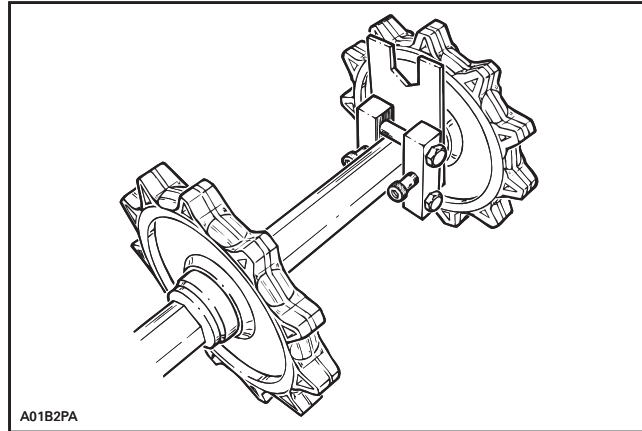
ADJUSTMENT

Sprocket/Track Alignment

CAUTION: Do not tamper 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.

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).

⚠ WARNING

Do not operate a snowmobile with a cut, torn or damaged track.

REMOVAL

S-Series and Skandic LT

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.

Skandic WT/SWT/WT LC

Remove the following parts:

- rear suspension
- muffler.

Drain gearbox.

Remove drive axle then track.

INSTALLATION

All Models

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.

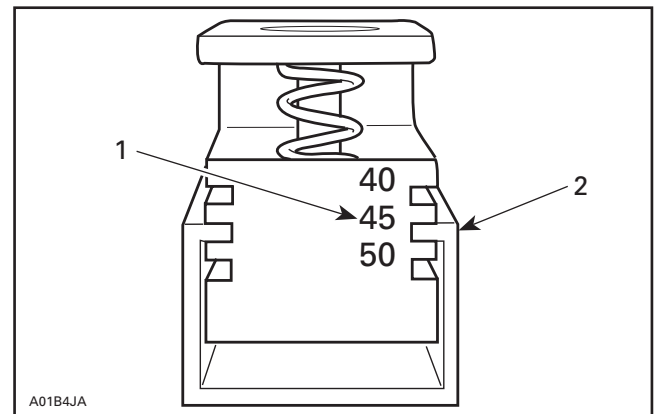
Track Tension and Alignment

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 halfway 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. Refer to TECHNICAL DATA.

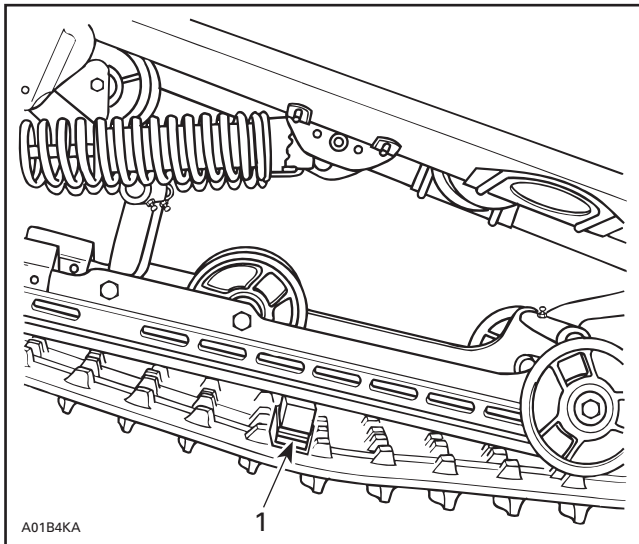


1. Example: 45 mm
2. Extrusion

Section 07 REAR SUSPENSION

Subsection 05 (TRACK)

Insert preset 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.



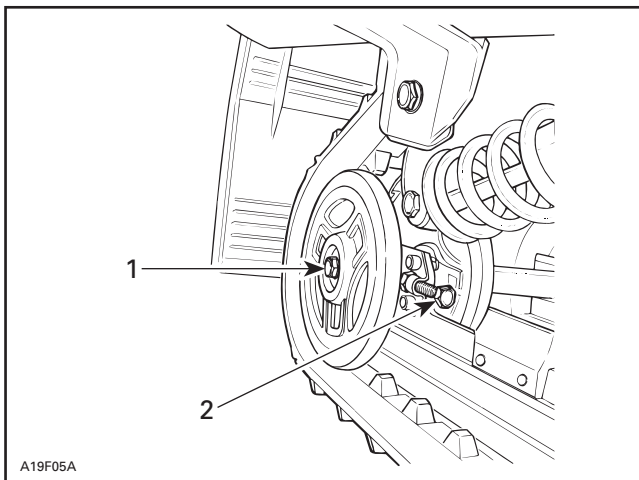
TYPICAL

1. Line

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

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

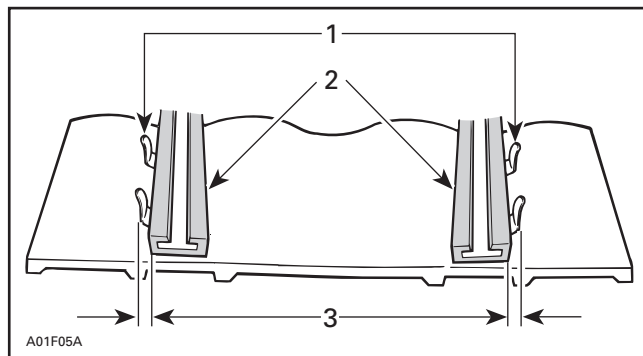
WARNING

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.

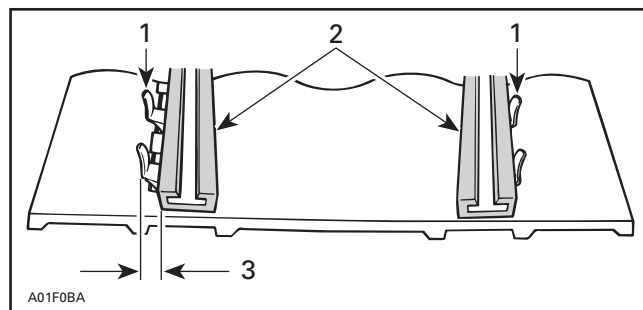


1. Guides
2. Slider shoes
3. Equal distance

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.

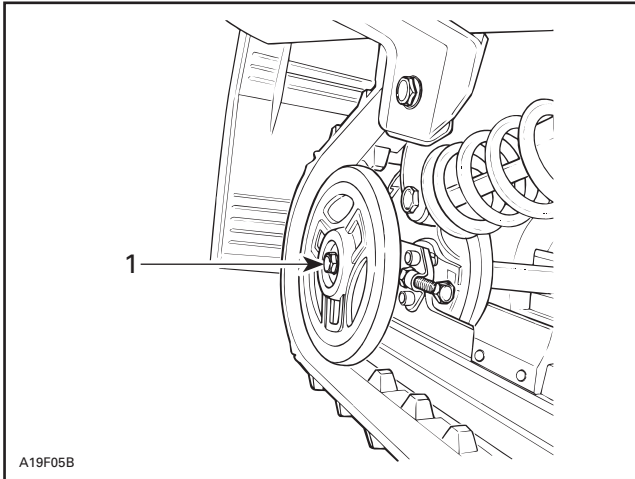
To correct, stop engine then tighten the adjuster bolt on side where guides are farthest to slide. Re-check alignment.



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

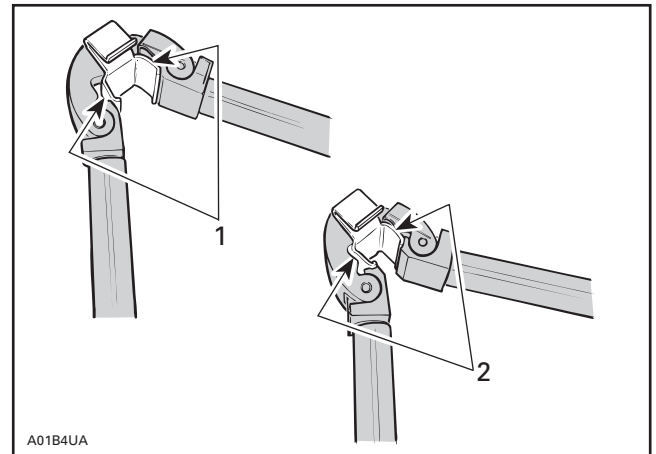
Removal

- 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 529 028 700) 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 529 028 800) bend cleat then push tabs into rubber.



TYPICAL

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