

SECTION 9 — TRACK/REAR SUSPENSION

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UNDERSTANDING THE SUSPENSION

GENERAL

Quick acceleration and the ability to go through the turns with power are the most important handling qualities. This section explains how the skid frame functions to provide these two important handling qualities. Before proceeding, however, note these terms.

Weight Transfer — A shift in the center of gravity in any direction depends on the force applied.

Track Tension — The amount of tightness or looseness of the track when correctly mounted in the chassis.

Spring Tension — The amount of force exerted on the spring by either fork tension adjustment or eyebolt adjustment.

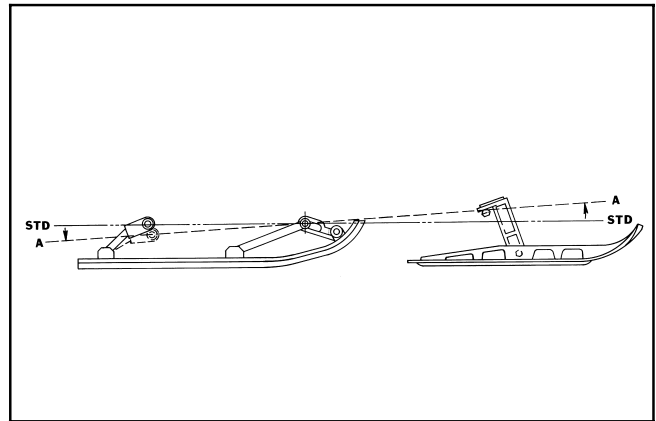
Ski Pressure — The amount of force exerted downward on the skis.

Good weight transfer characteristics are needed for fast acceleration (shift of weight from skis to track) and for cornering (shift of weight back to skis to hold the front end in turns). Effective weight transfer depends on suspension tension, position of rider, and the position of the front arm limiter.

To understand how the suspension system works, think of the entire system in terms of three points; the skid frame rear axle center, the skid frame front arm, and the ski saddle center.

Assume that the front arm functions as a stationary pivot point between the rear axle center and the ski saddle center. Also assume that the ski saddle center is the same height off the ground as the rear axle center. This produces the standard position arrangement.

Fig. 9-1

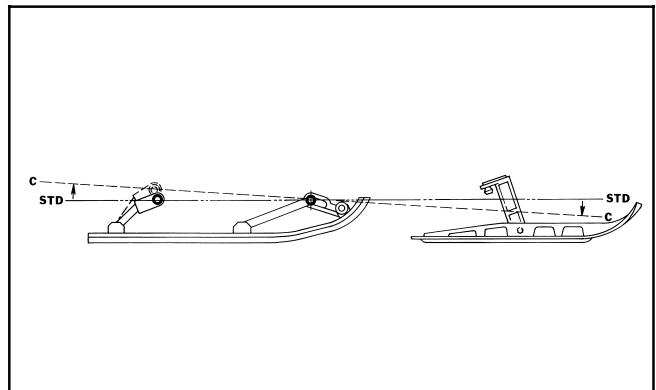


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Under acceleration when the center of gravity is transferred to the rear of the machine, the rear suspension collapses slightly. This brings the rear arm point downward and with the front arm stationary, the teeter-totter effect reduces the pressure on the skis, position A.

However, for controlled cornering, more pressure is needed on the skis. So when the driver decelerates coming into a corner, the center of gravity is transferred forward, putting the required pressure onto the skis and reducing the pressure on the rear suspension, position C.

Fig. 9-2



0728-181

This is essentially what weight transfer is all about — the shift of weight to the rear of the machine for positive traction and good acceleration or to the front of the machine for positive handling and cornering control.

ADJUSTMENT AND HANDLING GUIDE

There are two basic rules to remember when adjusting the drive train to correct handling problems.

1. If encountering handling problems while coming into a corner, correct these problems by working with front end adjustments.
2. If encountering handling problems while coming out of the corner, correct these problems by working with the rear arm shock spring adjustment.

Check to make sure the carbides on the skis and track studs are sharp. Sharp carbides and ice studs are a must for good cornering and handling. Everyone's idea of what sharp really is may differ. What one driver thinks is sharp may actually be too dull for good handling. A good test to see if the carbide has lost its edge is to lightly scrape its edge across your thumb nail. If it is sharp, a fine powder will be removed from your nail. If this doesn't happen, it has lost

its edge and must be sharpened. To sharpen the carbide, some type of fixture will be needed to hold the carbide at the correct angle to an electric grinding wheel.

A file and whetstone could be used, but that would take a long time and a lot of hard work to get the sharpness required. Carbide should be sharpened quite often. For this reason, an extra set ready to change in a hurry is a necessity.

To assist in correcting different handling problems, review the following Adjustment Handling Guide section for the handling problem in the left column and its most probable corrective adjustment in the right column.

PROBLEM	REMEDY
1. Machine darts	<ol style="list-style-type: none"> 1. Hard pack or deep snow A. Loosen front arm spring tension 2. Sticky snow conditions A. Tighten front arm spring tension 3. Check ski alignment, must be toed out 1/8" at front 4. Check slide rail. If worn, replace 5. Check steering rods for being worn or loose
2. Rear of machine acts like it wants to come around and pass the front	<ol style="list-style-type: none"> 1. Loosen front arm spring tension 2. Soften rear spring tension 3. Add some studs to center belt of track 4. Move rear arm forward to next hole in rails 5. Decrease front spring rate or install softer springs
3. Machine doesn't go around turns or corners without drifting	<ol style="list-style-type: none"> 1. Stiffen front springs 2. Adjust rear spring blocks tighter 3. Install carbide wear bars
4. Machine rear starts to come around leaving corner	<ol style="list-style-type: none"> 1. Decrease rear spring rate evenly on both sides
5. Heavy steering	<ol style="list-style-type: none"> 1. Grease front spindles. Make sure grease comes out both top and bottom of spindle 2. Loosen bellcrank bolts 1/2 turn, lube pivot area with WD40 3. Move rear arm forward to next mounting hole. On 1989 models, drill another hole 1-1/2" forward of original mounting location. 4. Loosen rear spring tension or install softer springs
6. Slow in powder snow	<ol style="list-style-type: none"> 1. Loosen front arm, front arm is adjusted too tight 2. Soften rear suspension
7. Stiff ride	<ol style="list-style-type: none"> 1. Move rear arm forward to next mounting hole 2. Adjust rear spring tension

Problems Entering Corner	Remedy
1. Front end pushes coming into corner	<ol style="list-style-type: none"> 1. Check carbide sharpness 2. Check front arm adjustment 3. Shorten right side sway bar linkage 4. Increase front shock spring tension only on right ski 5. Increase left rear spring tension
2. Rear of machine starts to come around or drift entering corner	<ol style="list-style-type: none"> 1. Lengthen right side sway bar linkage 2. Decrease front spring rate or ski pressure 3. Check track studs for sharpness
3. Left ski lifts	<ol style="list-style-type: none"> 1. Lengthen right side sway bar linkage 2. Increase right rear spring tension as needed or decrease left rear spring tension
Problems Going Around or Leaving Corner	Remedy
1. Front end pushes coming out of corner	<ol style="list-style-type: none"> 1. Tighten front arm stop 2. Increase rear spring tension on both shocks if machine is flat. Increase left rear spring tension 3. Increase left rear spring tension
2. Left ski lifts	<ol style="list-style-type: none"> 1. Check machine roll angle. Shorten left sway bar linkage 2. Increase right rear spring tension as needed or decrease left rear spring tension 3. Increase both right and left spring tension on rear shocks
3. Rear of machine starts to come around leaving corner	<ol style="list-style-type: none"> 1. Decrease rear spring tension evenly on both shocks
General Handling Problems	Remedy
1. Machine darts from side to side or the front end collapses	<ol style="list-style-type: none"> 1. Check ski alignment 2. Check ski bump steer 3. Check steering rods for being worn or loose

SUSPENSION SETUP BASICS

FRONT ARM SPRING TENSION

■ **NOTE:** Read the following information closely as it pertains to all suspensions used in the last several years. If there are any questions, please contact the Arctic Cat Service Department.

It is desirable to run with very light front arm spring tension. When riding in 4 in. or more of snow, the machine will be quicker if the front spring tension is adjusted lightly.

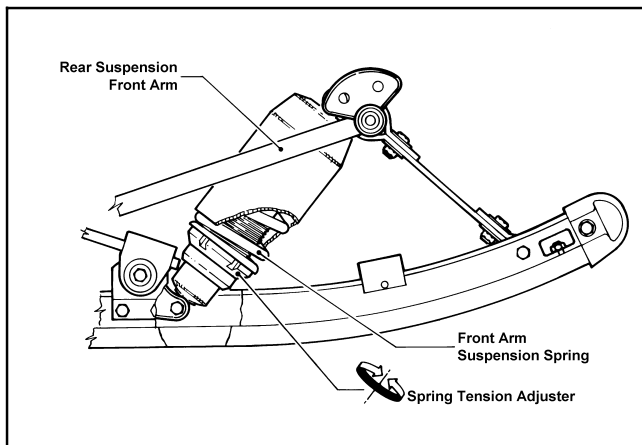
If the spring tension is adjusted too stiff, the track angle at the front of the skid frame is steep. This steep angle prevents the snowmobile from getting up on plane and slows down by 5 to 8 mph.

When riding in sticky snow (springtime or warm days) or hill climbing on hard snow, it may be desirable to stiffen the front arm spring tension. When this is done, weight is transferred back quicker. The problem with too much front arm spring tension is that the feel of the snowmobile becomes very short. The reason for this is the front arm becomes the pivot point between the spindles and rear of the machine. With dominant spring tension on the front arm, the suspension is basically contacting the snow from a point below the front arm to the skis or the spindle pressure point. This makes for a very short and darting machine on the trail. This is especially true when decelerating and the center of gravity is transferred forward.

A good method for adjusting the front spring tension follows.

■ **NOTE:** On those models having a coil spring over the front arm shock absorber, the spring tension should be set as soft as possible when operating on trails and in deep snow.

Fig. 9-3



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FRONT ARM LIMITER STRAPS

Under no circumstances should the front arm limiter strap be lengthened. If lengthened, it may cause shock absorber travel problems.

The two limiter straps on AWS models can be shortened if desired. This adjustment must be made to suit driving style and some test driving time. With the rear arm in its present mounting location, no advantage has been noted from changing the strap length. If the front arm straps are shortened, the result will be more ski pressure and aggressive steering.

SKI SHOCK ABSORBER SPRINGS

The shock absorber springs have been matched to the shock valving and rear suspension. These springs are the result of hours of testing and comparison riding trying many different combinations of springs and shocks. If there is a need to make changes, there are several spring and shock sizes to choose from. While making these changes, keep the following points in mind.

Heavier Or Stiffer Springs

1. These will require shocks with more rebound control, or the front end will become like a pogo stick.
2. With stiffer springs, the front end will become more aggressive in the corners as more weight will be transferred to the skis when decelerating. Also, more weight is transferred to the rear on acceleration and can cause the rear shocks and spring to bottom out.
3. If the springs are too stiff for general riding conditions and style, the ride comfort is gone.

Spring Tension Too Soft

1. Front end bottoms out; hard on front end parts.
2. Less aggressive steering in corners on deceleration, and less weight is transferred to the skis because of softer springs.
3. Less weight gets transferred to rear of the machine upon acceleration.

■ **NOTE:** When softening the ski springs, also soften the rear to match entire suspension.

⚠ CAUTION

If the ski shock spring is adjusted too loose, the spring retainer may fall out. If the spring is adjusted beyond specification, the spring will coil bind and spring adjuster damage will occur.

FRONT ARM SPRING TENSION TOO STIFF

1. Slows machine down in loose snow.
2. Causes the machine to dart and dive as a result of less track on the ground on deceleration.

■ **NOTE:** It has been our experience that a tight front arm works well under only two conditions: sticky snow conditions in the spring of the year and in hill climbing on hard packed snow.

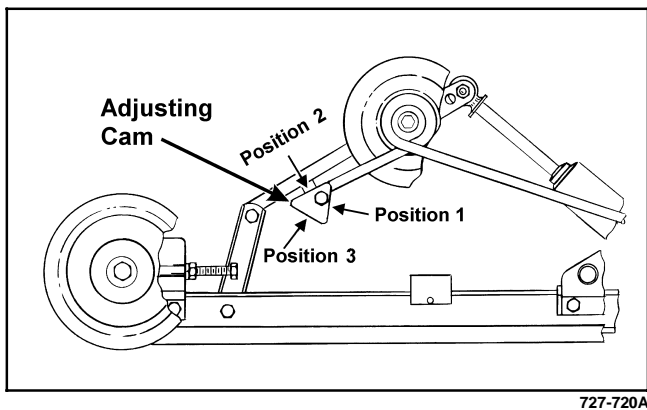
It has also been our experience with AFS models that with the front arm adjusted too soft, the spring may come off the roller. There haven't been any other problems in handling caused by a soft front arm.

REAR ARM SPRING TENSION

The rear spring tension is adjusted for the weight of the driver. There are three possible adjustments.

- 1st block position - set for up to 150 lb
- 2nd block position - set for 150 to 200 lb
- 3rd block position - set for over 200 lb

Fig. 9-4



REAR ARM MOUNTING POSITION (Between Rails)

For 2000, there are several mounting holes found in the rails for installing the rear arm.

The holes have been added to the suspension to provide adjustment to fine-tune the suspension to driving styles.

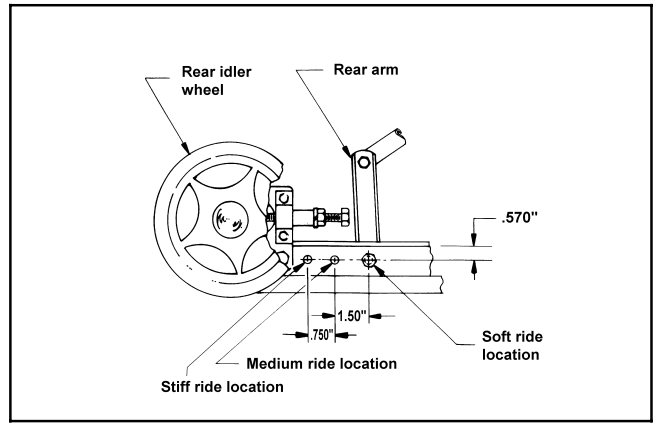
If the ride is too soft, moving the rear arm back between the rails will stiffen the ride. By moving the rear arm forward, it will collapse quicker and allow more transfer of weight to the back of the suspension. This will also affect the handling by providing a softer ride and also easier steering.

■ **NOTE:** Please add the third hole to any FastTrack suspension on 1994 through 1997 models. It can easily be done by drilling a 3/8 in. hole 3/4 in. behind the last hole in the rails.

CAUTION

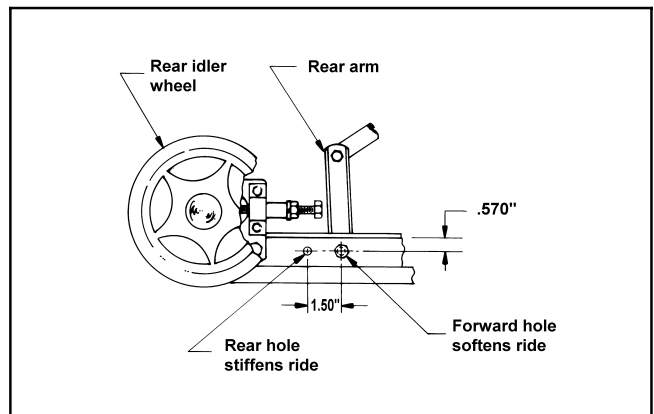
The rear arm mounting position between the rails on all 1998 Panther models must remain in the rear mounting hole. If the arm is moved forward, rear arm and rear shock damage will occur.

Fig. 9-5



The drawbacks of moving the rear arm forward are that the suspension may bottom out quicker and some travel is lost.

Fig. 9-6



■ **NOTE:** When making any changes to the front or rear suspension, the change should be made at both ends to keep the suspension balanced. For example, installing stiffer springs in front may require installing the next step stiffer spring in back to keep everything in balance.

In an effort to assist everyone with suspension adjustment, use the Adjustment and Handling Guide on page 9-3. If there are any questions, please contact the Service Department.

WISH BONE ARM SUSPENSION (All Models with Rubber Mounting Bushings)

Proper setup on the AWS style front-end assembly with rubber mounting bushings starts by making sure the wishbone arms are parallel. To check, follow the procedure below.

1. Lift the front-end assembly high enough so the skis are off the floor. Place a support under the belly pan.
2. Remove both shock absorbers.
3. Standing in front of the machine, view the wishbone arms to see if they are parallel with the chassis. If they are not level, proceed to step 4.
4. Lift each ski assembly separately until it is level or parallel, then place a support (block of wood) under the ski to hold arms parallel.
5. Remove the exhaust pipe.
6. Loosen the four bolts securing the upper and lower wishbone arms to the front end assembly.

Fig. 9-7

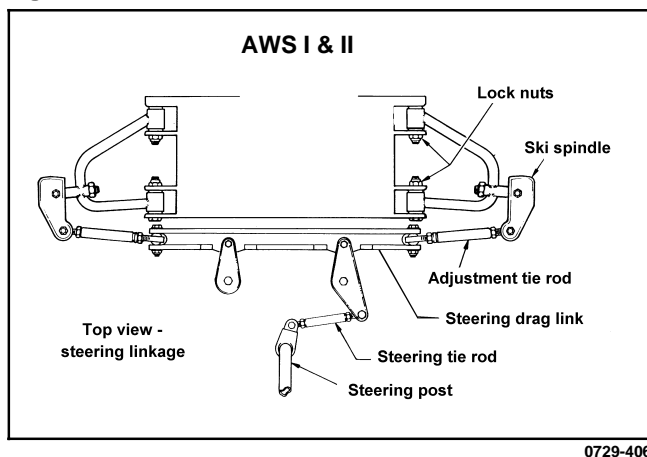
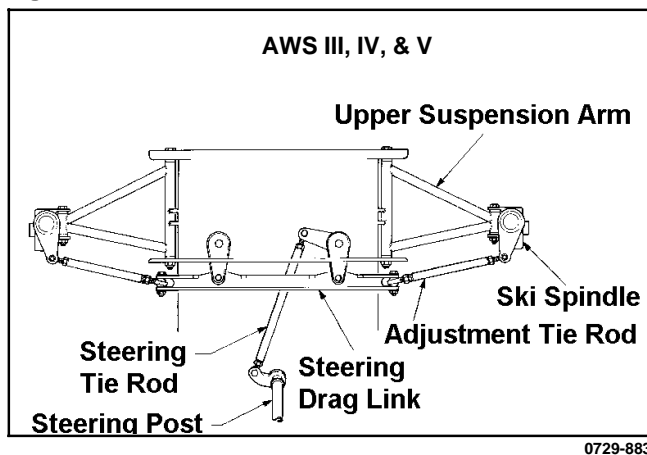


Fig. 9-8



7. Lift each ski assembly to maximum travel and set back down on support. Standing in front, check once again to make sure arms are parallel.

8. Tighten the four bolts securing the two arms on each side to 9.7 kg-m (70 ft-lb).
9. Install the shock absorber making sure to tighten the two mounting bolts.

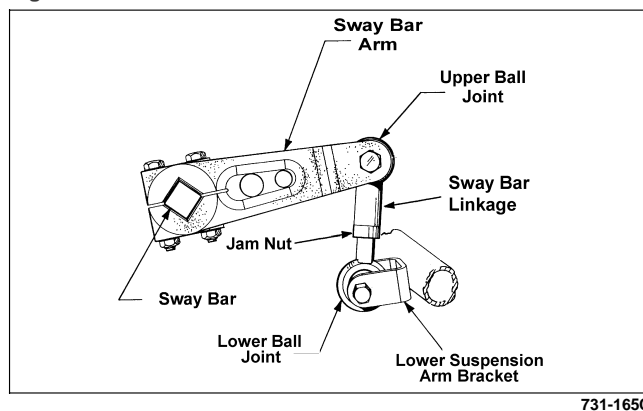
■ **NOTE:** The above procedure is not required on AWS front-end assemblies having solid bushings in the A-Arms. The bolts should be checked for proper torque on these models.

10. Install the exhaust pipe.

■ **NOTE:** It is important that the ski tips are slightly elevated. Preloading the skis in the slightly upward position enhances the handling characteristics of the snowmobile.

ADJUSTING SWAY BAR LINKAGE

Fig. 9-9



1. Place a lift or stand under snowmobile so the skis are off the ground and the ski shocks are fully extended.
2. On the right side, remove the cap screw connecting the lower ball joint on sway bar linkage.

■ **NOTE:** If the sway bar is in proper adjustment, holes in the suspension bracket and the ball joint will line up. If they do not line up, the linkage will need to be adjusted.

3. If the ball joint is lower than the bracket, loosen the jam nut and shorten the linkage. If the linkage will not adjust short enough, go to left side and lengthen linkage until ball joint and bracket holes are lined up.
4. If the ball joint is above the bracket, shorten the left side linkage to get alignment. If linkage will not go short enough, lengthen the right side linkage to get the alignment.

■ **NOTE:** Adjust the linkages so they stay as short as possible.

5. Install the ball joint into suspension bracket and secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

6. Reset the jam nuts while making sure the ball joints are centered in the sway bar and suspension brackets.

■ **NOTE:** If one linkage becomes extra long, the sway bar should be removed and inspected for damage or twisting.

SKI ALIGNMENT — AWS MODELS

■ **NOTE:** Before starting the ski alignment procedure, be sure the track has been properly tightened and aligned.

1. Turn the handlebar to the straight-ahead position.
2. Place a long straightedge against the outside edge of the track so it lies along the inside edge of the left-side ski.

■ **NOTE:** The straightedge should be long enough to extend from the back of the track to the front of the ski.

3. Measure the distance from the straightedge to the edge of the ski in two places. Take one measurement from the forward end of the ski edge and the other measurement from the rearward end of the ski edge.

■ **NOTE:** Make sure the measurements are taken on the flat surface of the ski edge and not on the rounded surface.

4. The measurement from the forward and rearward ends of the ski edge either must be equal or the forward measurement must not exceed the rearward measurement by more than 3 mm (1/8 in.).

■ **NOTE:** On those skis not having carbide wear bars, it is better to have the skis “toed out” 1/8 - 1/4 in. for best handling. If the ski tips are “toed in,” the machine will dart when trail riding.

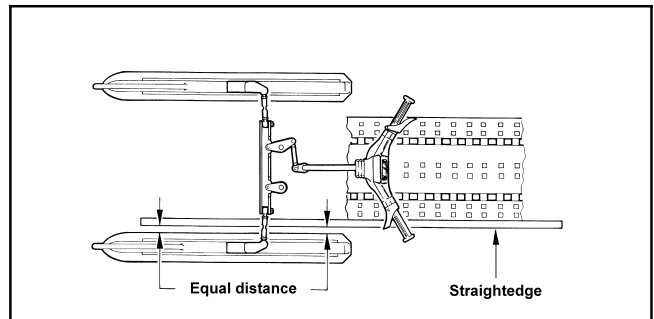
5. If an adjustment is necessary, loosen the tie rod jam nuts. Adjust ski alignment by rotating the tie rod.
6. After making necessary adjustments, apply red Loctite #271 to the threads of the tie rod and tighten the jam nuts against the tie rod.

⚠ WARNING

Neglecting to use Loctite and tightening the jam nuts may cause loss of snowmobile control and possible personal injury or death.

7. Repeat procedure for the right-side ski.

Fig. 9-10



0730-129

SUSPENSION TYPE & MOUNTING LOCATION CHART

The following information will provide the type of suspension used in each 2000 model and its mounting location.

To clarify the mounting location columns, use the chart and illustrations found on the following pages.

2000 SUSPENSION MOUNTING LOCATION CHART

■ **NOTE:** The Rear Arm Mounting Position refers to where the rear arm mounts into the tunnel. The Rear Arm To Rail Position refers to where the lower portion of the rear arm mounts between the slide rails.

MODEL	TRACK LENGTH & LUG HEIGHT	SKID FRAME	FRONT ARM MOUNTING POSITION	REAR ARM MOUNTING POSITION	REAR ARM TO RAIL POSITION	SHOCK LINK ROD P/N	SHOCK LINK ROD LENGTH
Z 370	15" x 121" x .750"	Fastrack—Formed Rail	Upper	Above Running Board	Middle	0704-350	11.750 in. (298.45 mm)
Panther 340 — Panther 440	15" x 136" x .750"	Fastrack—Formed Rail with Torque Link	Upper	Above Running Board*	Rear	0704-324	12.600 in. (320.04 mm)
Panther 550	15" x 136" x .750"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board**	Rear	0704-324	12.600 in. (320.04 mm)
Z 440 — ZL 440	15" x 121" x .750"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
ZL 500/500 EFI/550/580 EFI/600/600 EFI/700	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
Pantera 580 EFI — Pantera 1000 — Triple Touring 600	15" x 136" x .750"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	No Adjustment	0704-334	13.500 in. (342.90 mm)
ZRT 600 — ZRT 800	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
ZR 500 Models — ZR 600 Models (Carb) — ZR 700/700 LE	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
ZR 600 EFI	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
ZR 600 EFI LE	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-361	11.050 in. (280.67 mm)
Thundercat	15" x 121" x .850"	Fastrack—Stamped Rail with Torque Link	Upper	Above Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)
Thundercat M/C	15" x 136" x 2.00"	Fastrack—Stamped Rail with Torque Link	Upper	Below Running Board	Second Hole Back	0704-350	11.750 in. (298.45 mm)

* In Forward mounting hole

** In Rear mounting hole

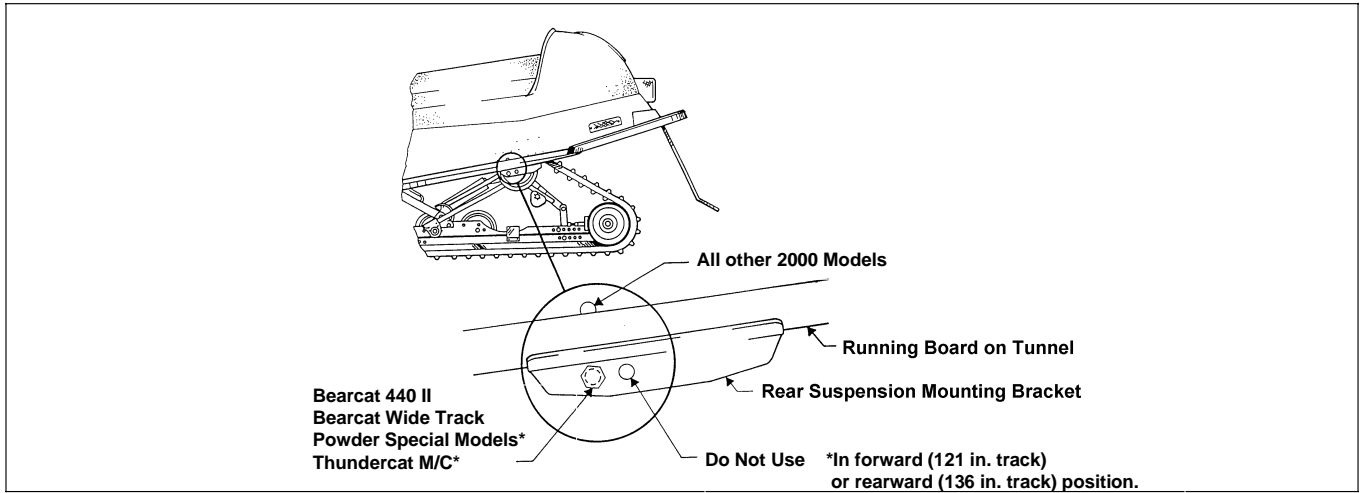
MODEL	TRACK LENGTH & LUG HEIGHT	SKID FRAME	FRONT ARM MOUNTING POSITION	REAR ARM MOUNTING POSITION	REAR ARM TO RAIL POSITION	SHOCK LINK ROD P/N	SHOCK LINK ROD LENGTH
Powder Special 500 EFI Powder Special 500 EFI LE	15" x 136" x 1.40	Fastrack—Stamped Rail with Torque Link	Upper	Below Running Board	Forward Hole	0704-334	13.500 in. (342.90 mm)
Powder Special 600 — Powder Special 600 EFI	15" x 136" x 2.00"	Fastrack—Stamped Rail with Torque Link	Upper	Below Running Board	Forward Hole	0704-334	13.500 in. (342.90 mm)
Powder Special 700 — Powder Special 700 LE	15" x 136" x 2.00"	Fastrack—Stamped Rail with Torque Link	Lower	Below Running Board	Forward Hole	0704-334	13.500 in. (342.90 mm)
Powder Special 600 EFI LE	15" x 136" x 2.00"	Fastrack—Stamped Rail with Torque Link	Upper	Below Running board	Forward Hole	0704-350	11.750 in. (298.45 mm)
Bearcat 340	15" x 136" x .750"	Fastrack—Formed Rail	Upper	Above Running Board	Middle	0704-125	11.750 in. (298.45 mm)
Bearcat 440 I Bearcat 440 II	15" x 136" x .920" 16" x 156" x 1.00"	Fastrack—Formed Rail — Articulating**	Lower	136" Above 156" Below Running Board*	Middle	0704-125	11.750 in. (298.45 mm)
Bearcat Wide Track	20" x 156" x 1.00"	Fastrack—Formed Rail — Articulating	Lower	Below Running Board*	Middle	0704-125	11.750 in. (298.45 mm)

* In Forward mounting hole

** 440 II only

REAR SKID FRAME MOUNTING HOLES

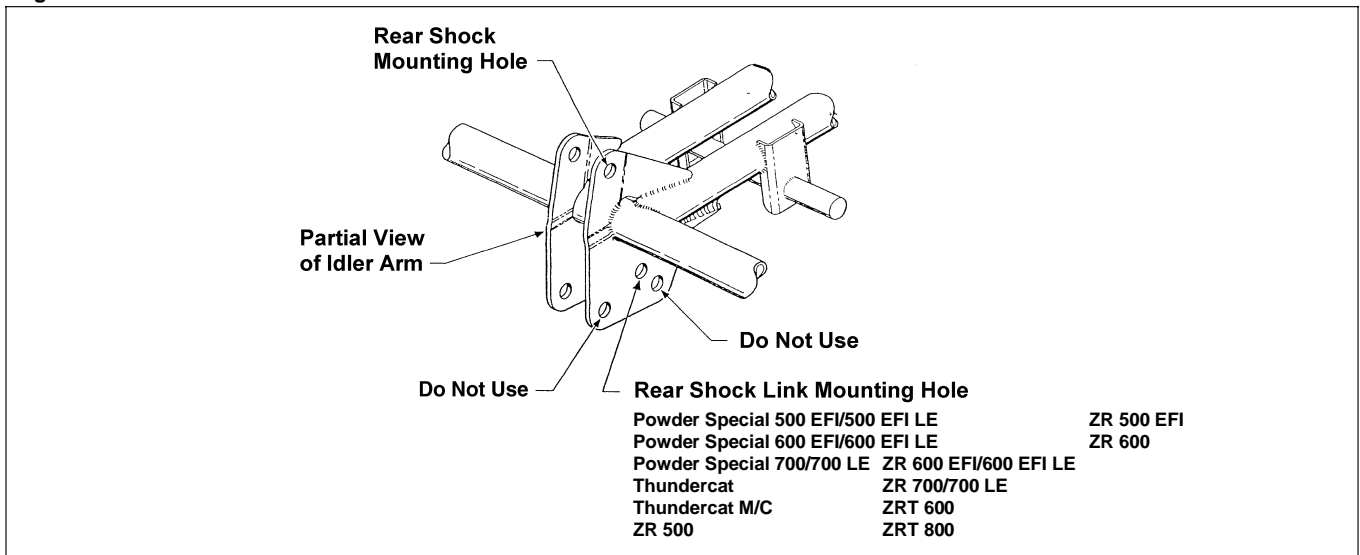
Fig. 9-11



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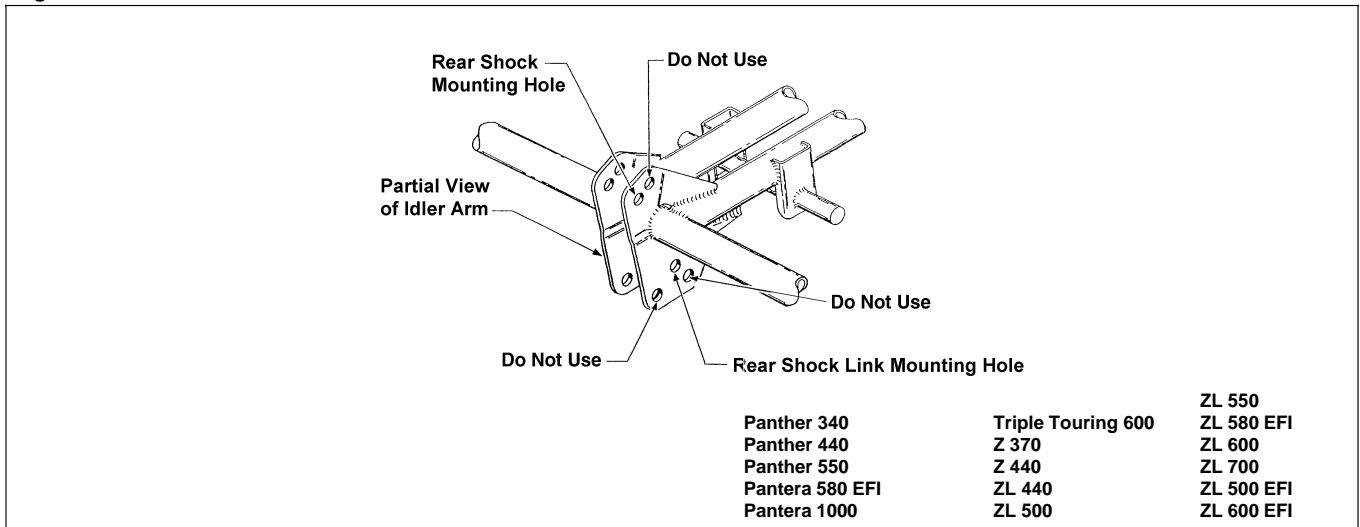
REAR SHOCK LINK AND REAR SHOCK MOUNTING LOCATIONS

Fig. 9-12



733-190A

Fig. 9-13



733-190C

CHASSIS AND SKID FRAME MOUNTING LOCATIONS

The suspensions have several possible mounting locations in the slide rails and tunnel. However, it is recommended by Arctic Cat Inc. that when disassembling and assembling the suspension, all stock mounting locations be used as shown in the following illustrations.

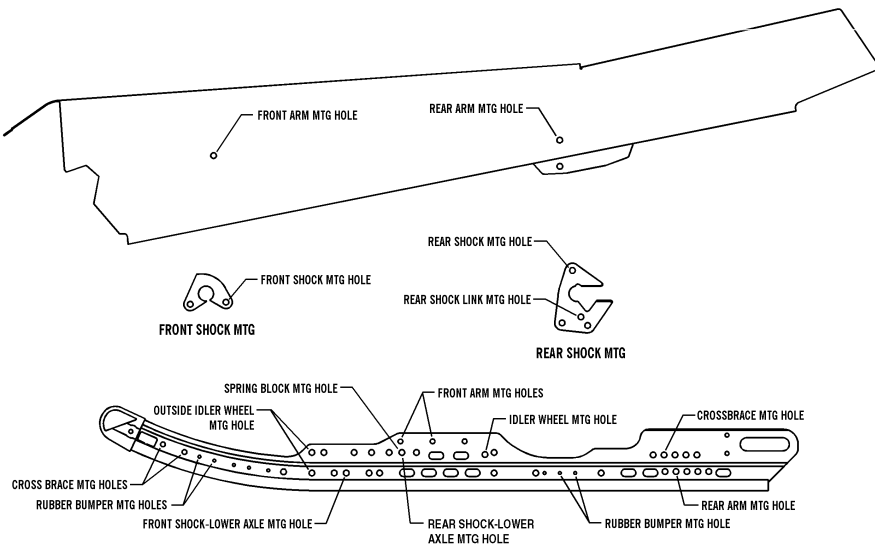


CAUTION

It is extremely important that all stock mounting locations be used. If any alterations to the skid frame are made, shock absorber and suspension damage may occur.

Fig. 9-14

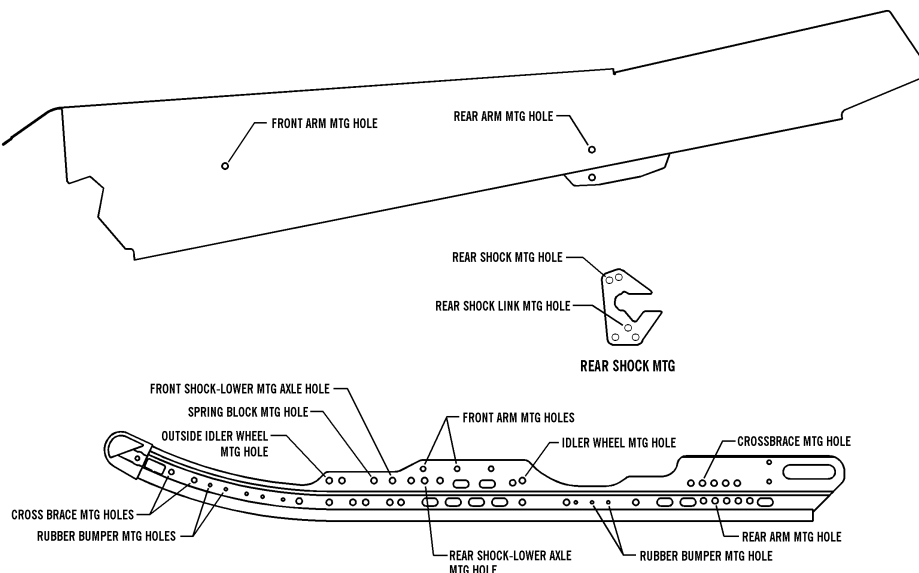
Thundercat — ZR 500/500 EFI/500 EFI LE — ZR 600/600 EFI/600 EFI LE — ZR 700/700 LE — ZRT Models



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Fig. 9-15

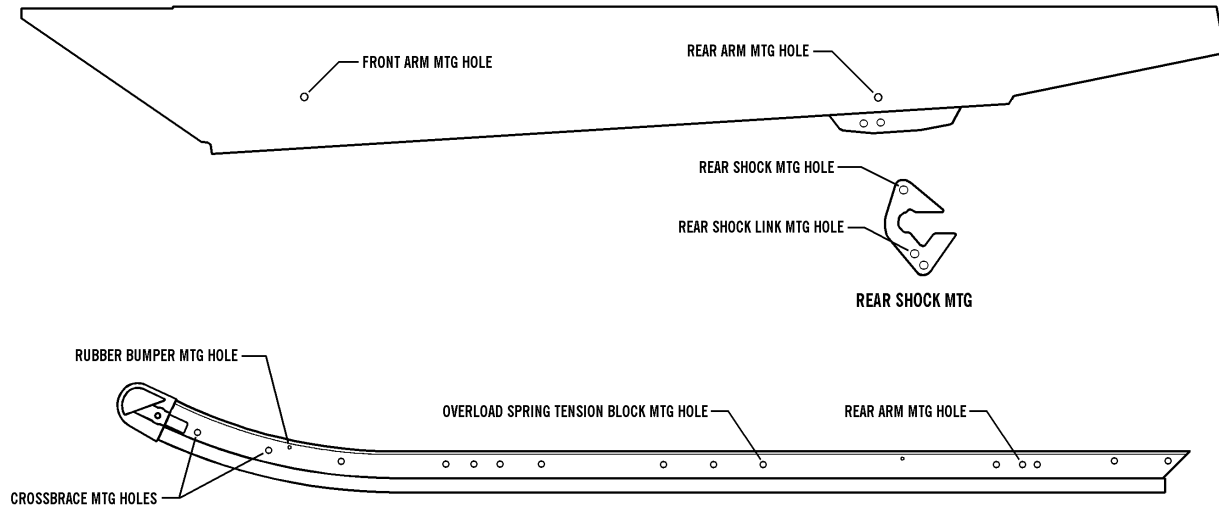
ZL Models



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Fig. 9-16

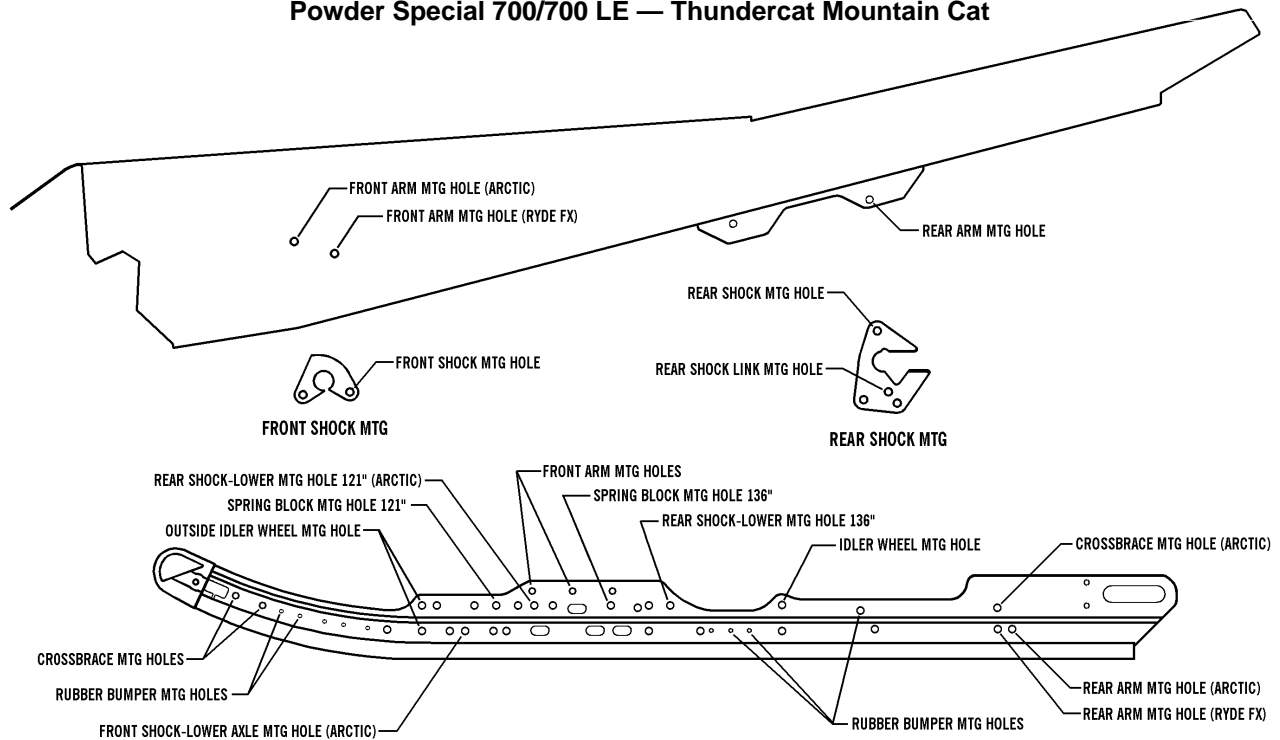
Bearcat 340 — Bearcat 440 I



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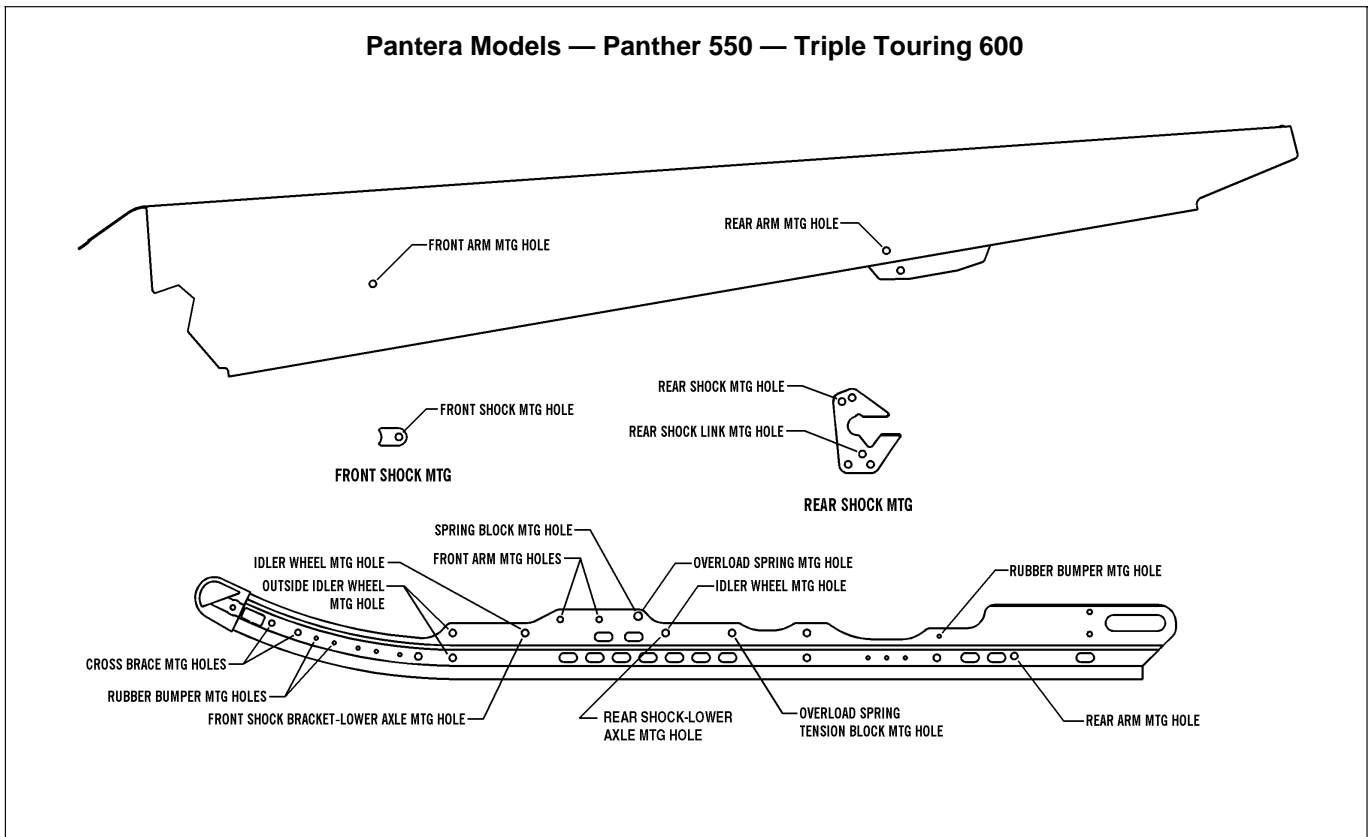
Fig. 9-17

Powder Special 500 EFI/500 EFI LE — Powder Special 600/600 EFI/600 EFI LE — Powder Special 700/700 LE — Thundercat Mountain Cat



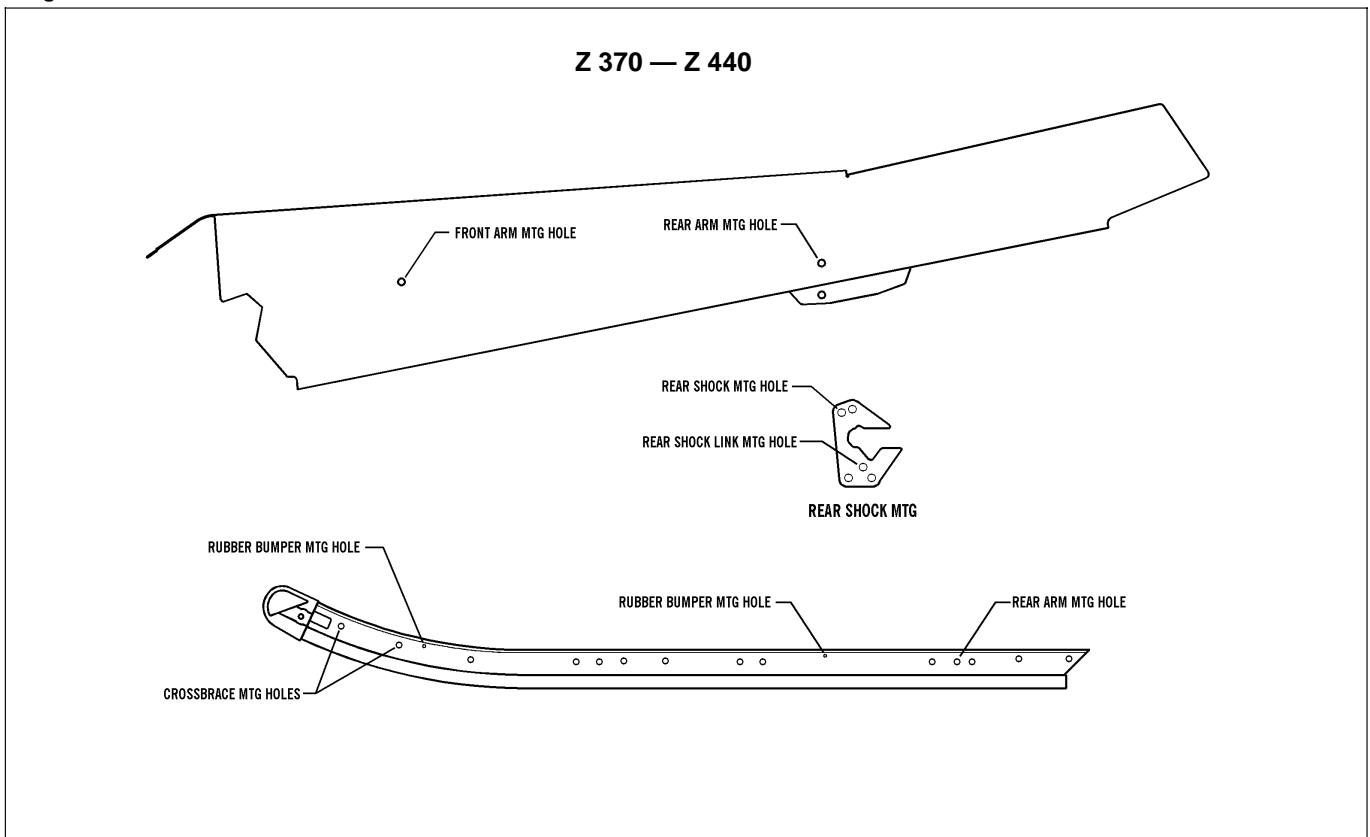
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Fig. 9-18



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Fig. 9-19



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Fig. 9-20

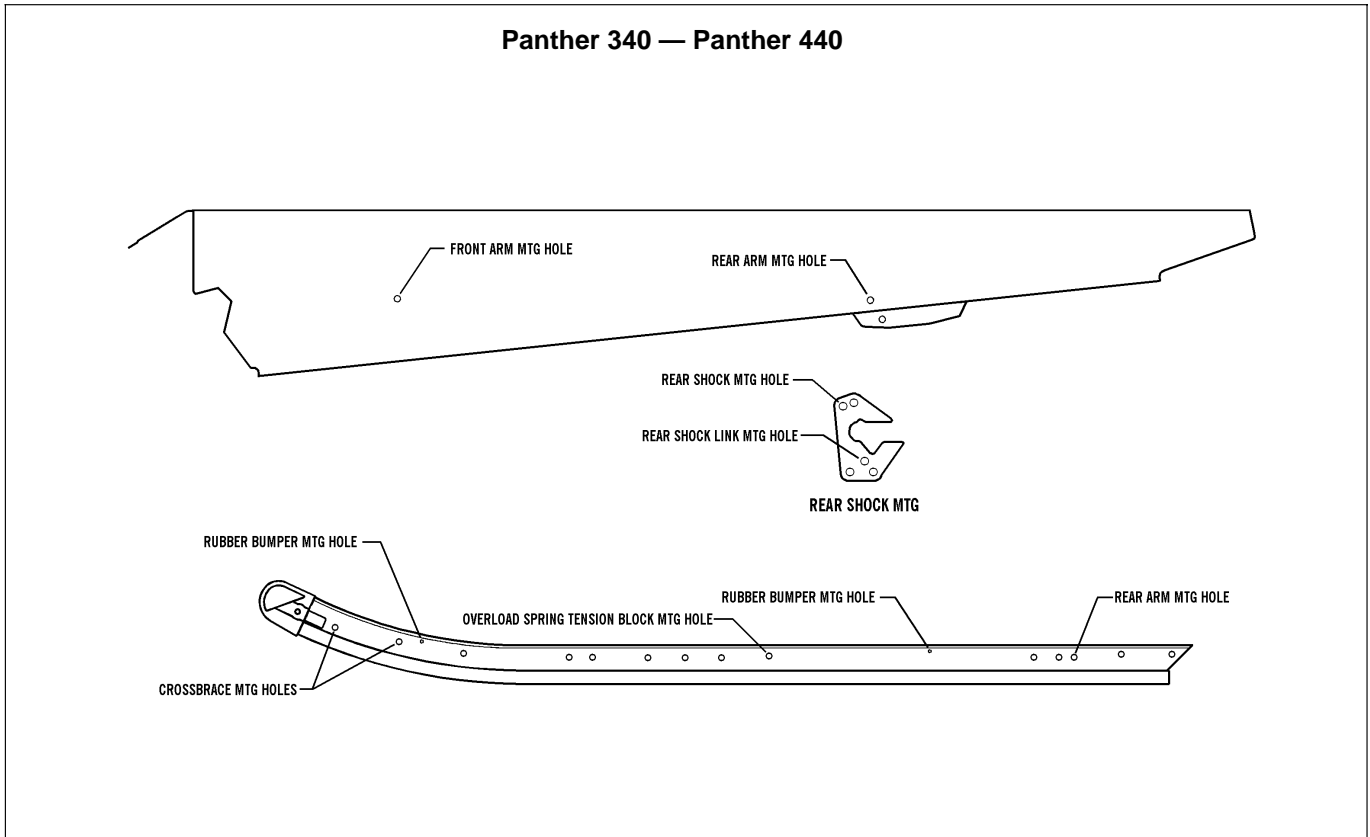
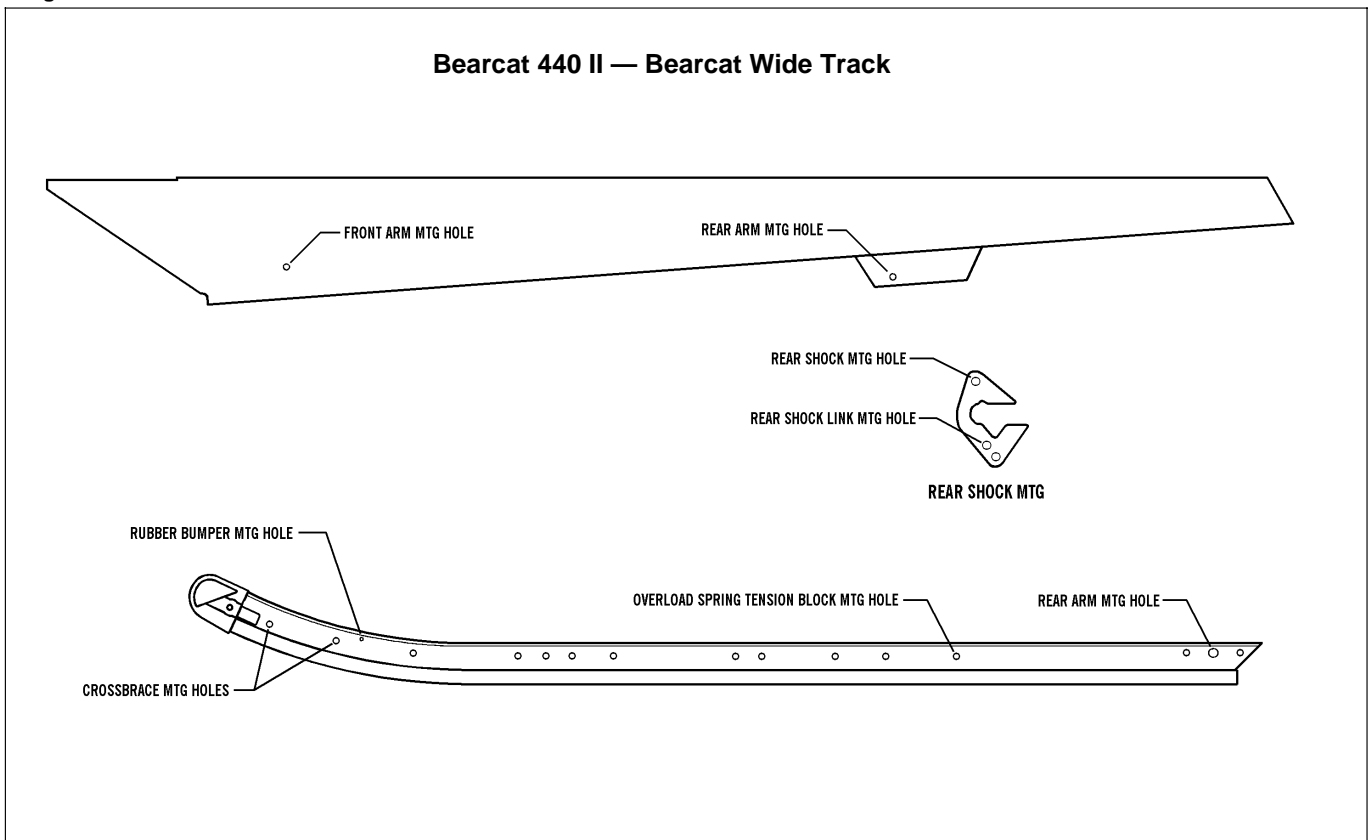


Fig. 9-21



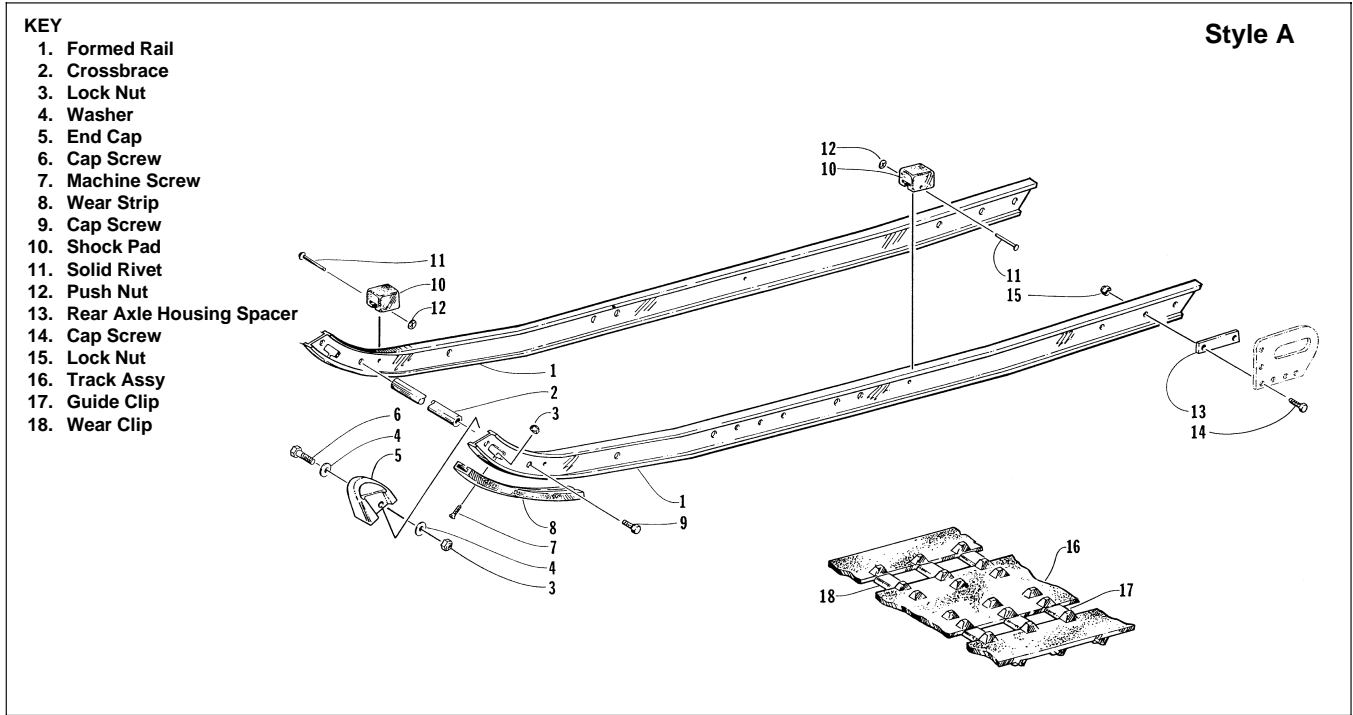
Servicing Chart

This chart is designed to direct the technician to the appropriate Skid Frame Schematics and Repair Procedure for servicing the rear suspension. Select the snowmobile model from the list and follow the chart to attain schematic designation and repair procedure.

Snowmobile Models	Slide Rail Style	Front Arm Style	Rear Arm Style	Idler Wheels Style	Articulating Skid Frame Style	Repair Procedure
Bearcat 340	A	B	H	B	N/A	3
Bearcat 440 I	A	B	H	B	N/A	3
Bearcat 440 II	A	C	C	C	A	3
Bearcat W/T	A	C	D	D	B	3
Pantera 580 EFI	G	E	B	G	N/A	2
Pantera 1000	G	E	B	G	N/A	2
Panther 340	A	D	B	E	N/A	3
Panther 440	A	D	B	E	N/A	3
Panther 550	G	E	B	F	N/A	2
Powder Special 500 EFI	D	E	G	J	N/A	2
Powder Special 500 EFI LE	E	F	F	K	N/A	1
Powder Special 600	E	E	G	J	N/A	2
Powder Special 600 LE	E	F	F	K	N/A	1
Powder Special 600 EFI	E	E	G	J	N/A	2
Powder Special 600 EFI LE	E	F	F	K	N/A	1
Powder Special 700	E	F	F	K	N/A	1
Powder Special 700 LE	E	F	F	K	N/A	1
Thundercat	F	F	F	M	N/A	1
Thundercat M/C	E	F	F	K	N/A	1
Triple Touring 600	G	E	B	L	N/A	2
Z 370	A	A	A	A	N/A	3
Z 440	A	A	A	A	N/A	3
ZL 440	B	E	E	H	N/A	2
ZL 500	B	E	E	H	N/A	2
ZL 500 EFI	B	E	E	H	N/A	2
ZL 550	B	E	E	H	N/A	2
ZL 580 EFI	B	E	E	H	N/A	2
ZL 600	B	E	E	H	N/A	2
ZL 600 EFI	B	E	E	H	N/A	2
ZL 700	B	E	E	H	N/A	1
ZR 500	F	F	F	I	N/A	1
ZR 500 EFI	F	F	F	I	N/A	1
ZR 600	F	F	F	I	N/A	1
ZR 600 EFI	F	F	F	I	N/A	1
ZR 600 EFI LE (Clicker)	C	H	F	I	N/A	1
ZR 600 EFI LE (Reverse)	F	F	F	I	N/A	1
ZR 700	F	F	F	I	N/A	1
ZR 700 LE (Clicker)	C	G	F	I	N/A	1
ZR 700 LE (Reverse)	F	F	F	I	N/A	1
ZRT 600	F	F	F	M	N/A	1
ZRT 800	F	F	F	M	N/A	1

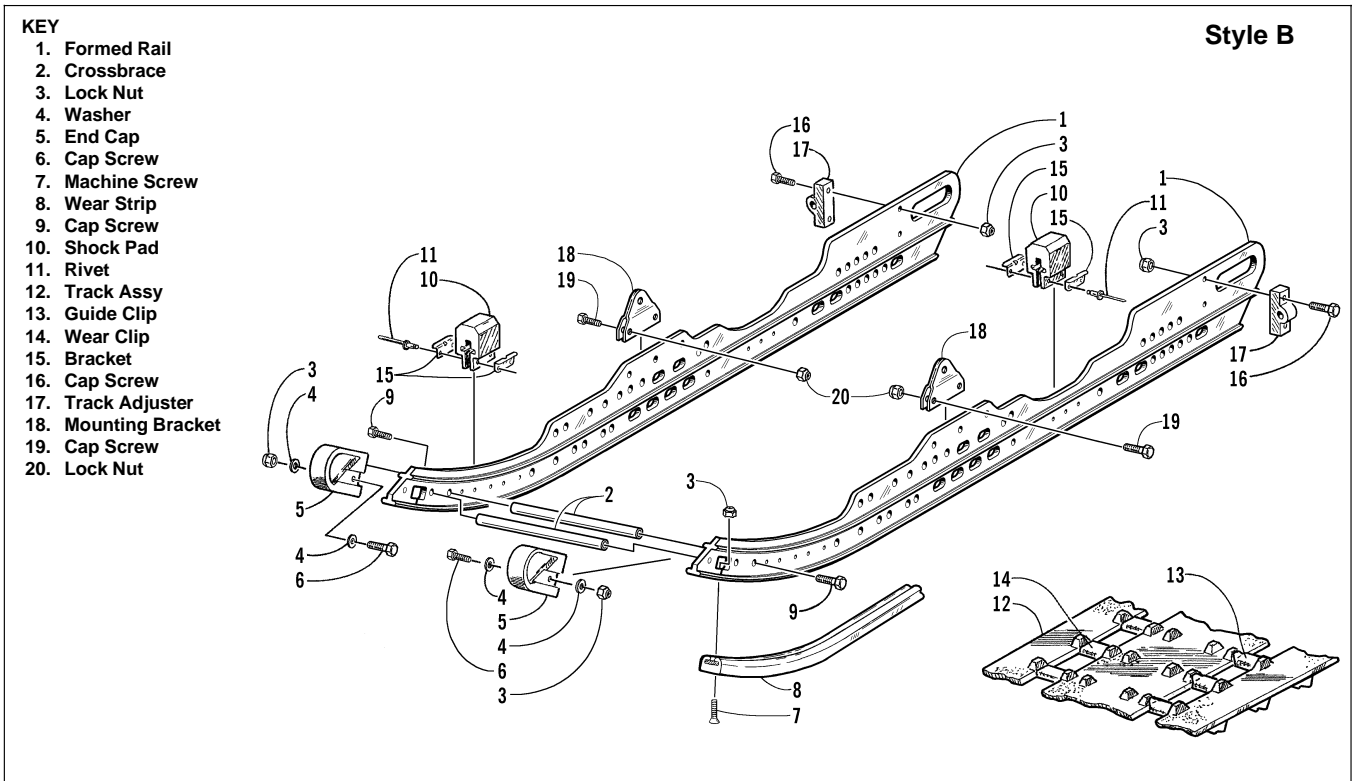
Slide Rail Schematics

Fig. 9-22



0730-954

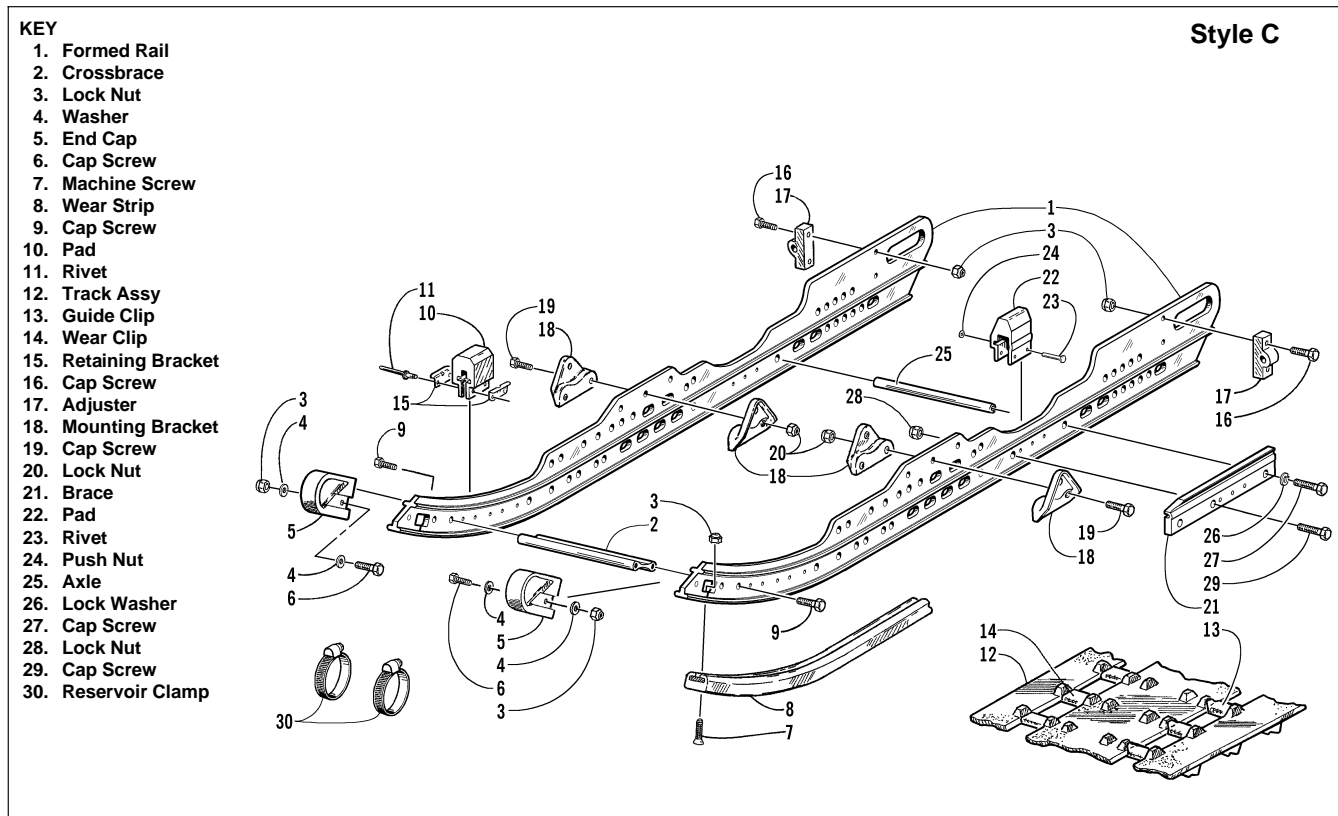
Fig. 9-23



0735-060

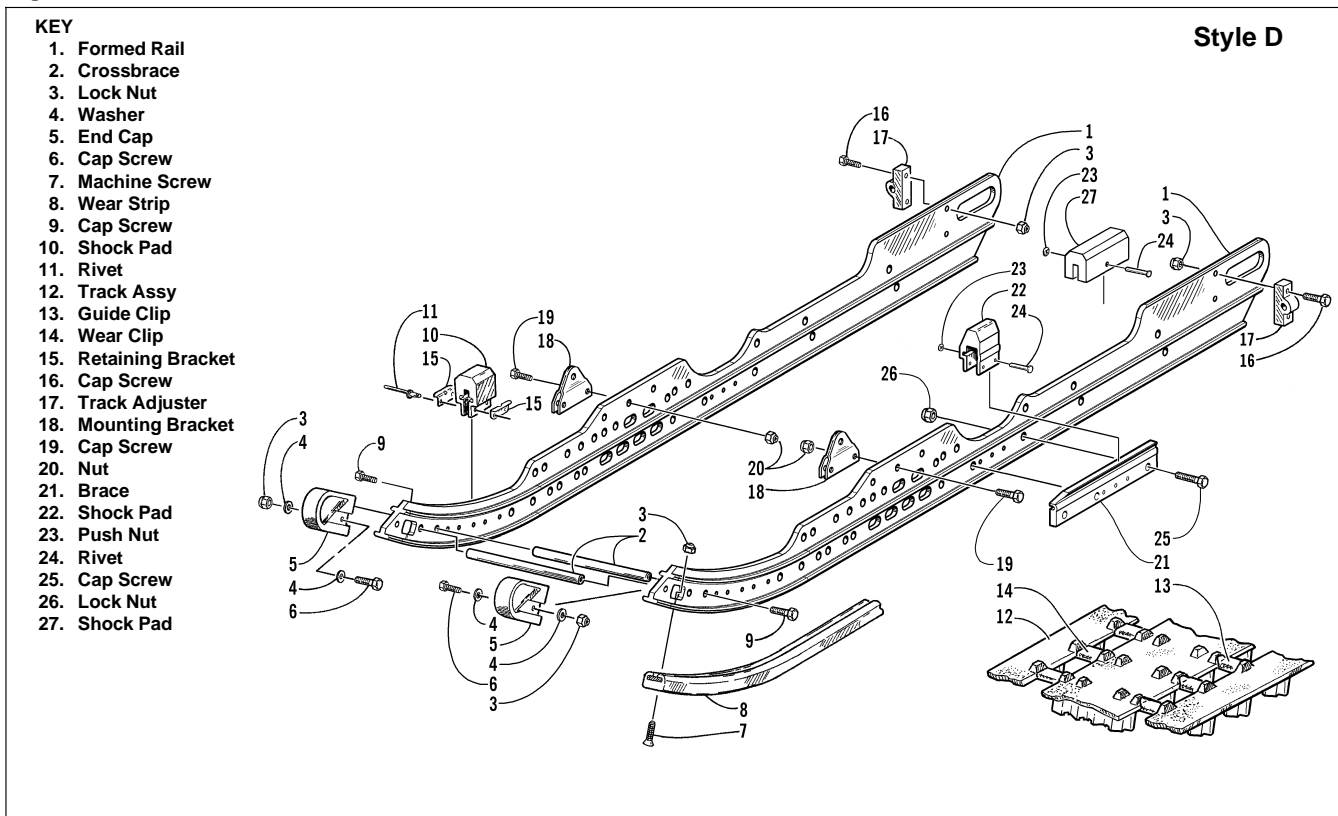
9-17

Fig. 9-24



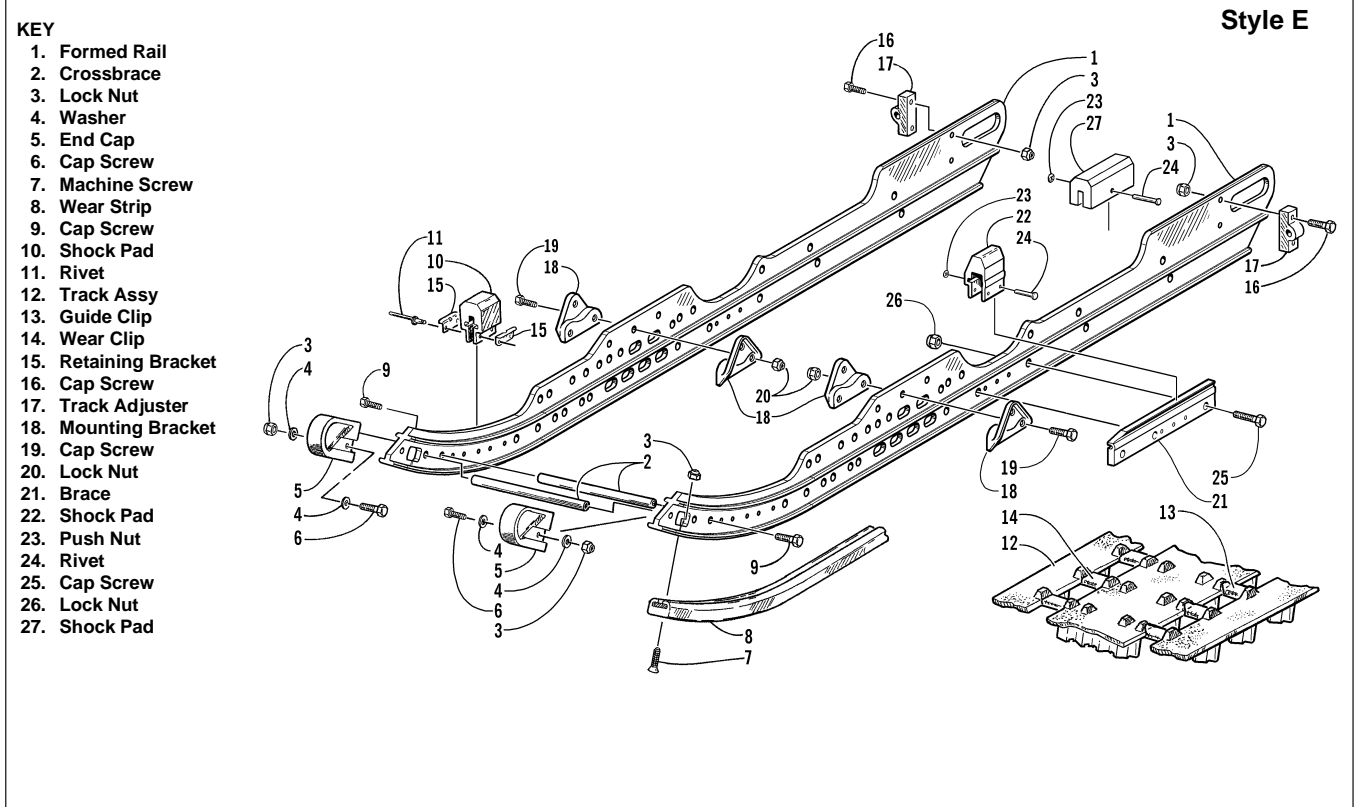
0735-257

Fig. 9-25



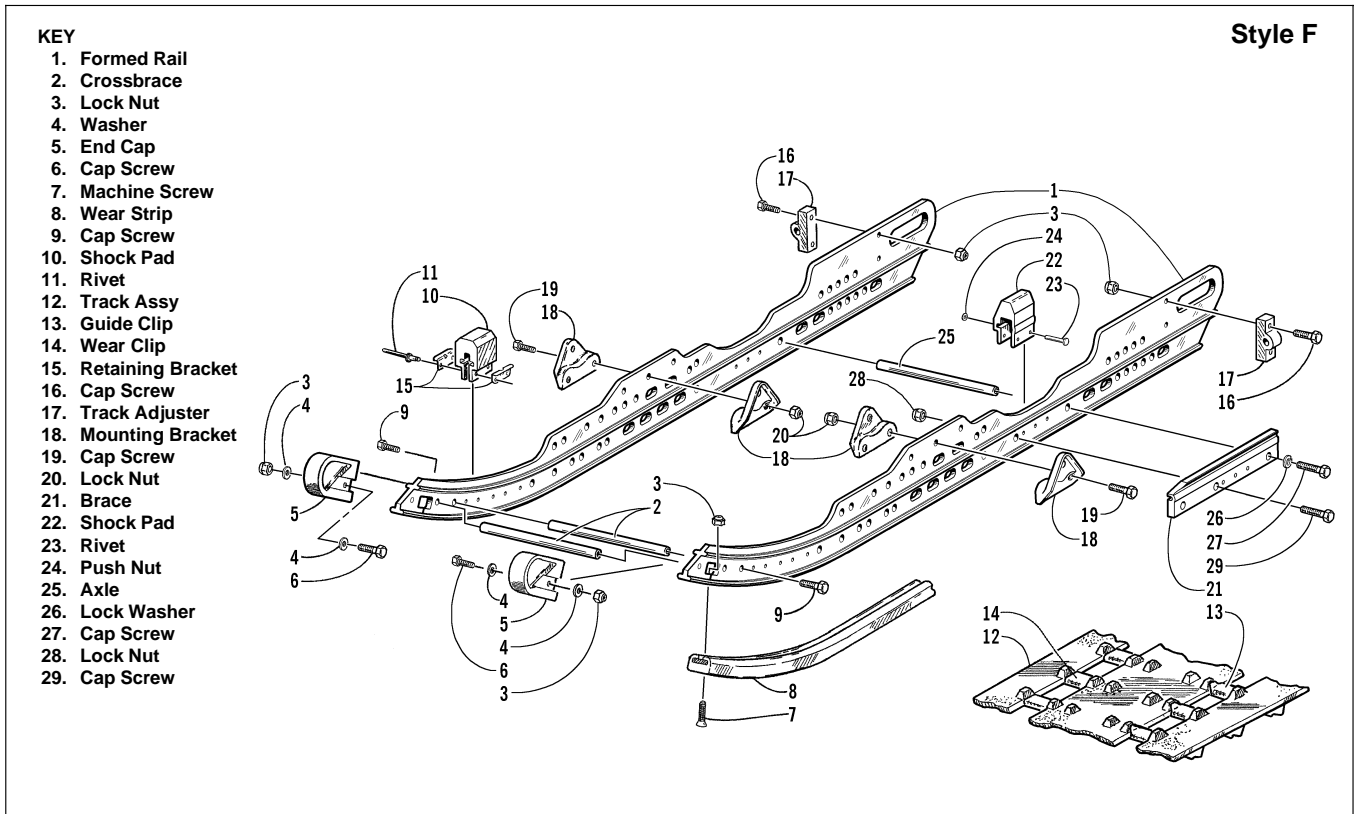
0735-262

Fig. 9-26



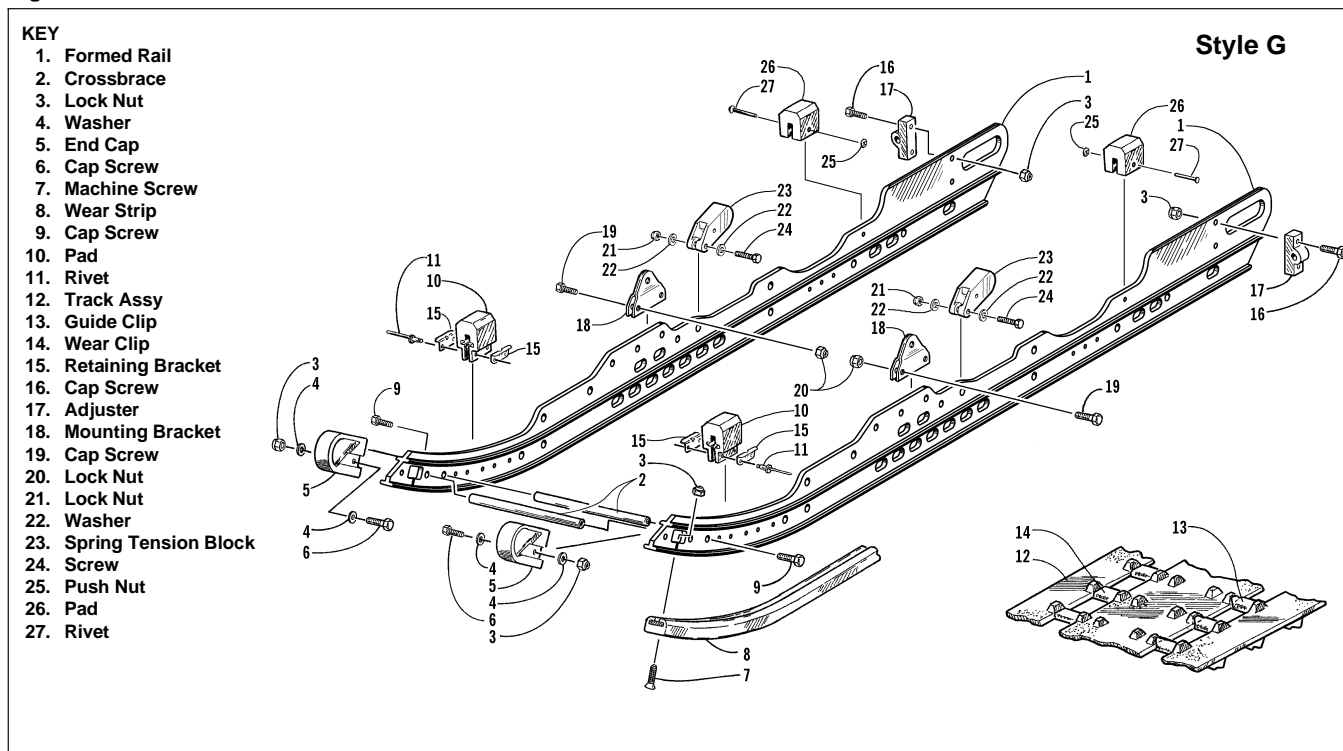
0735-276

Fig. 9-27



0735-104

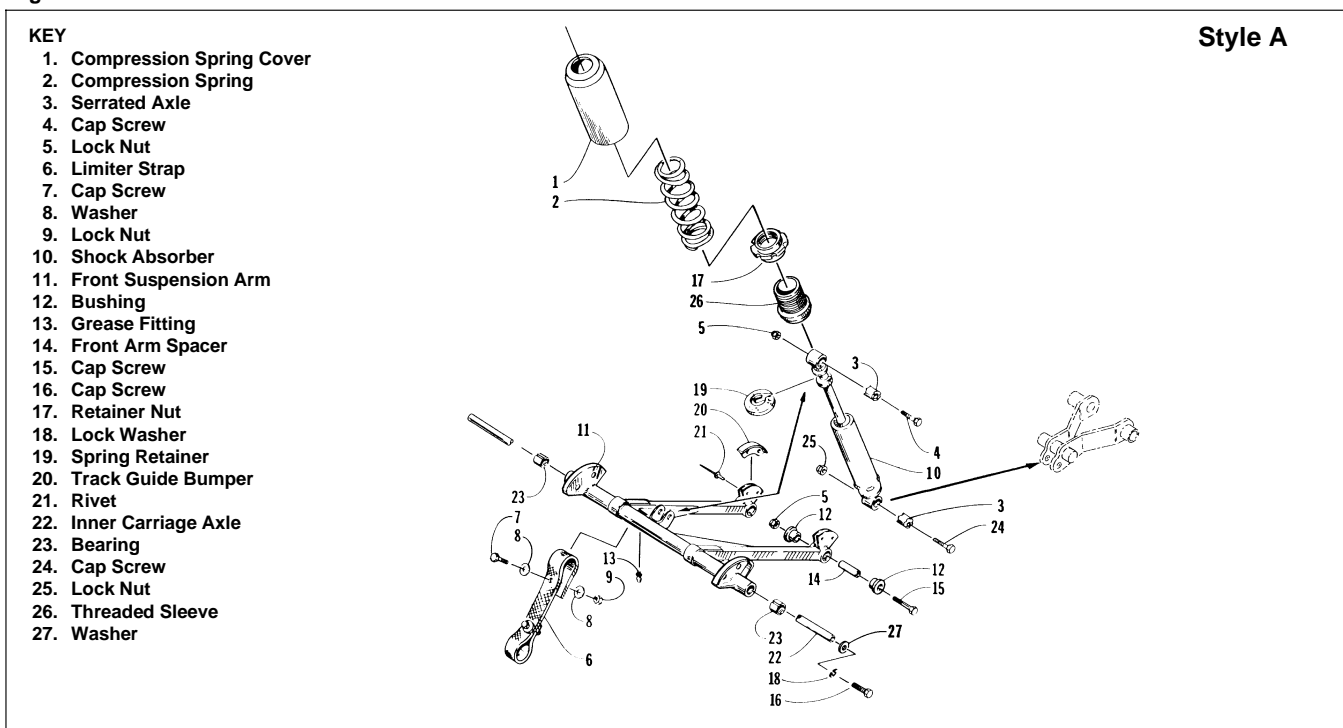
Fig. 9-28



0734-227

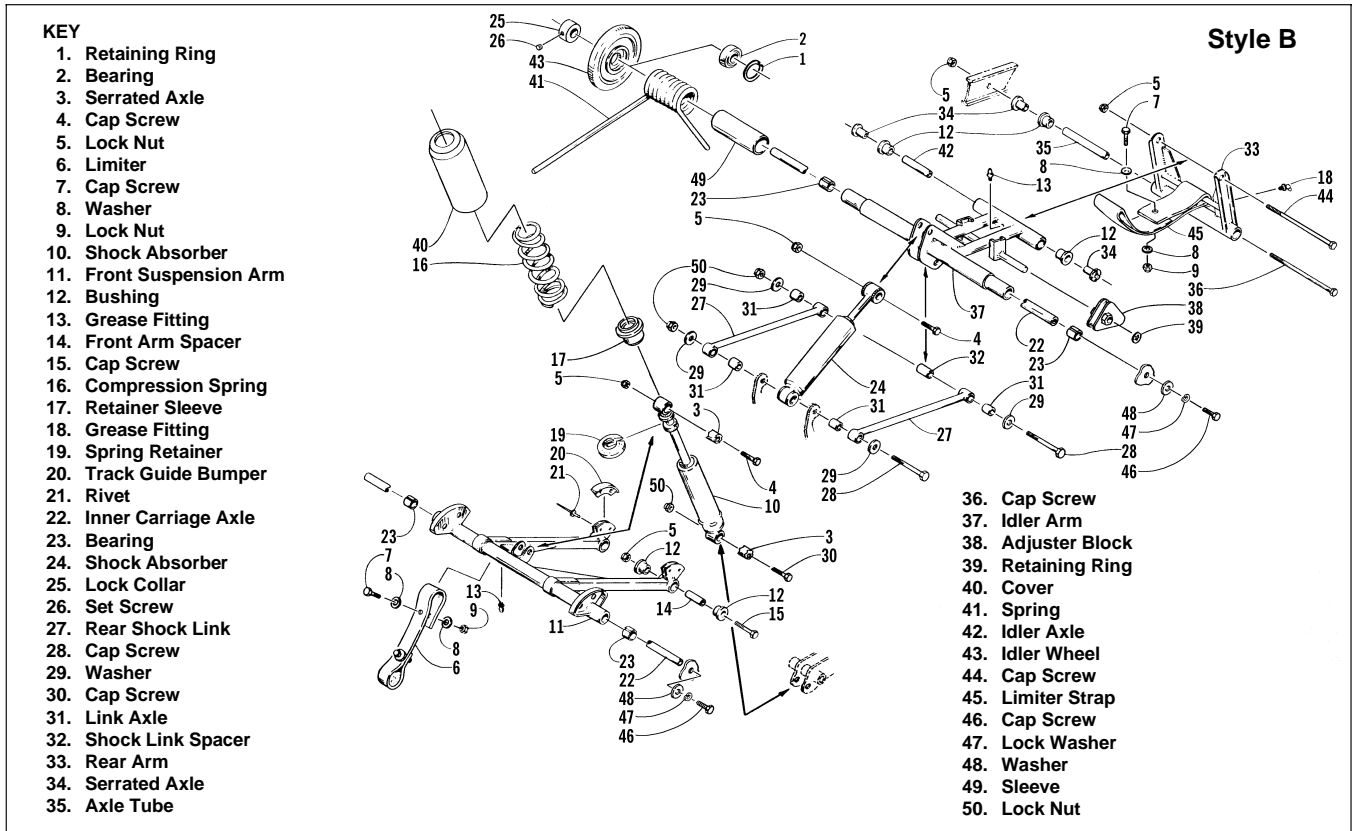
Front Arm Schematics

Fig. 9-29



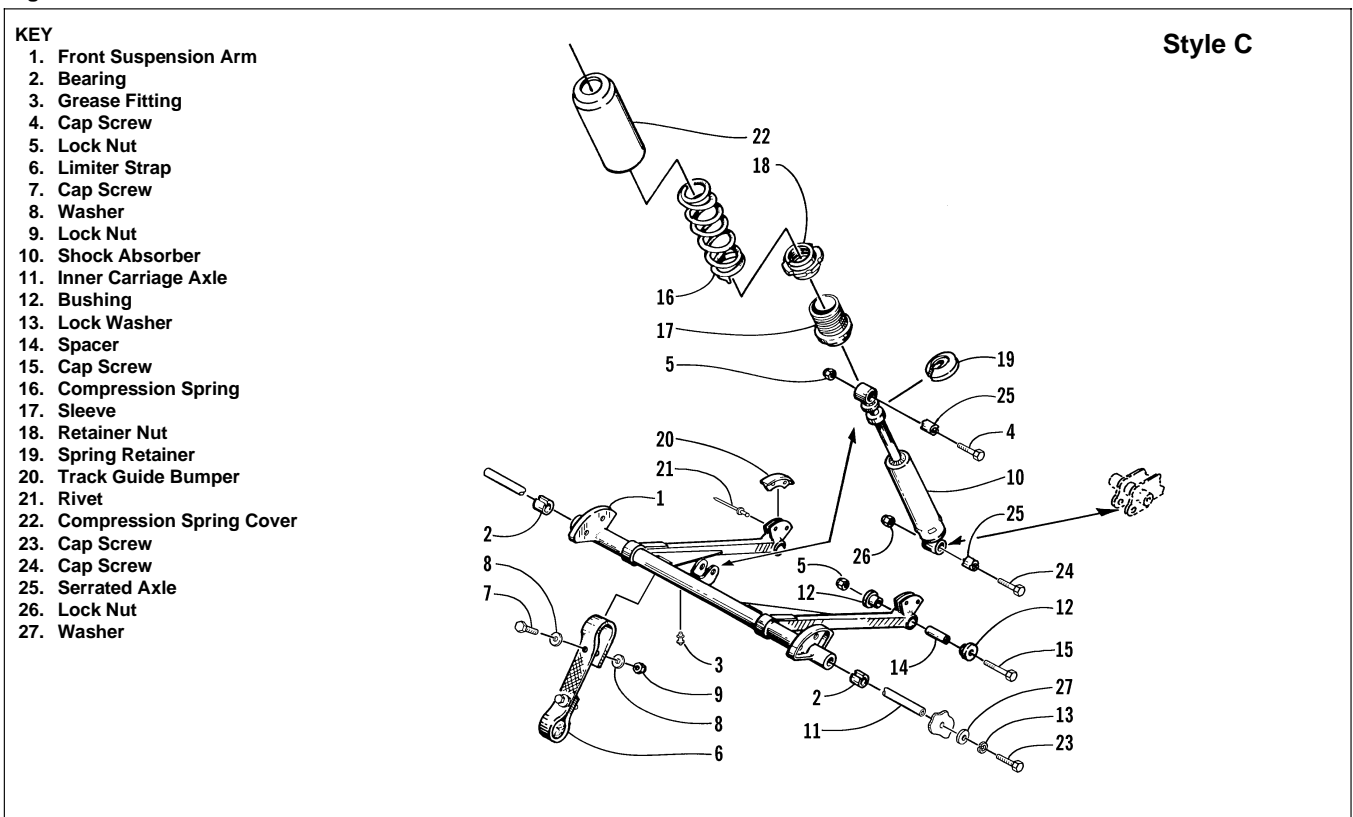
0733-527

Fig. 9-30



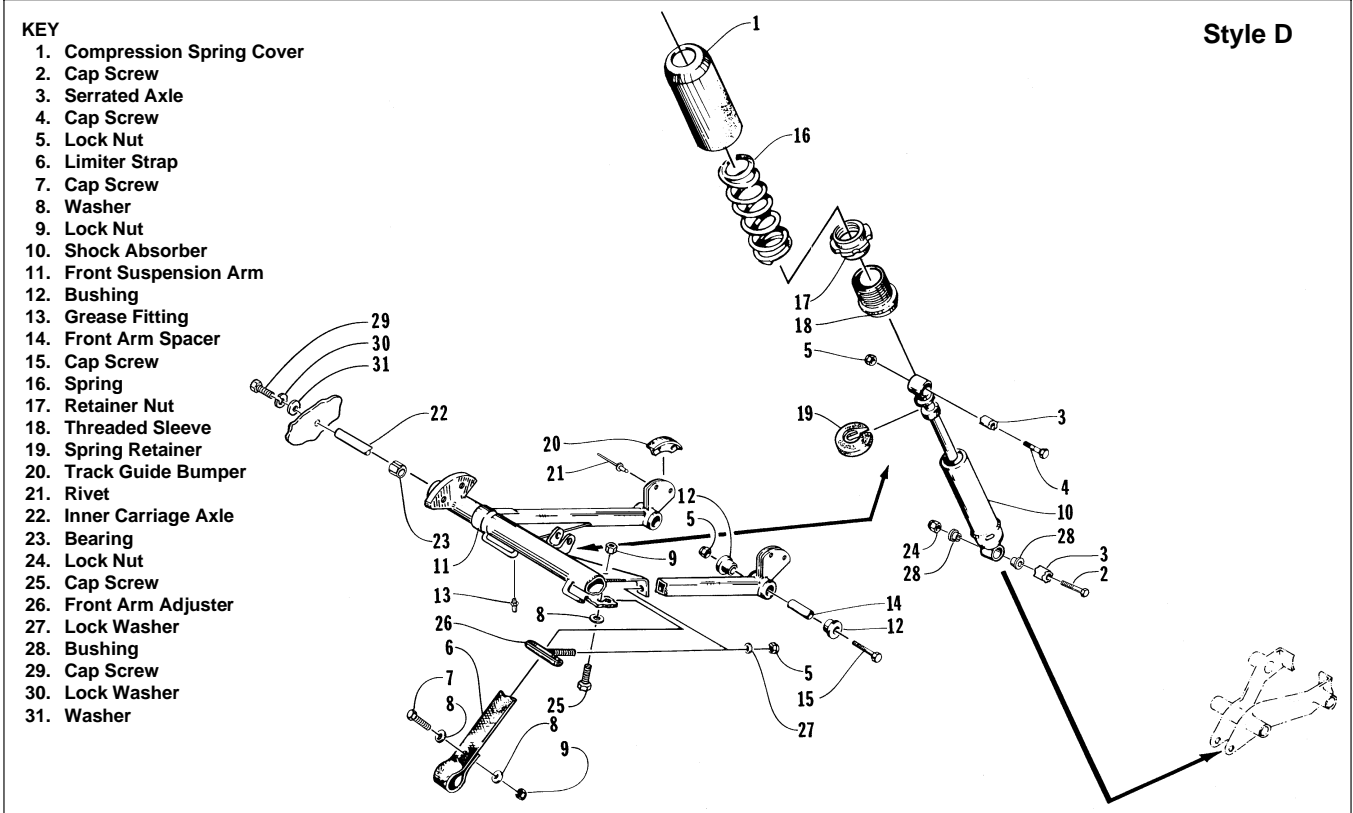
0734-571

Fig. 9-31



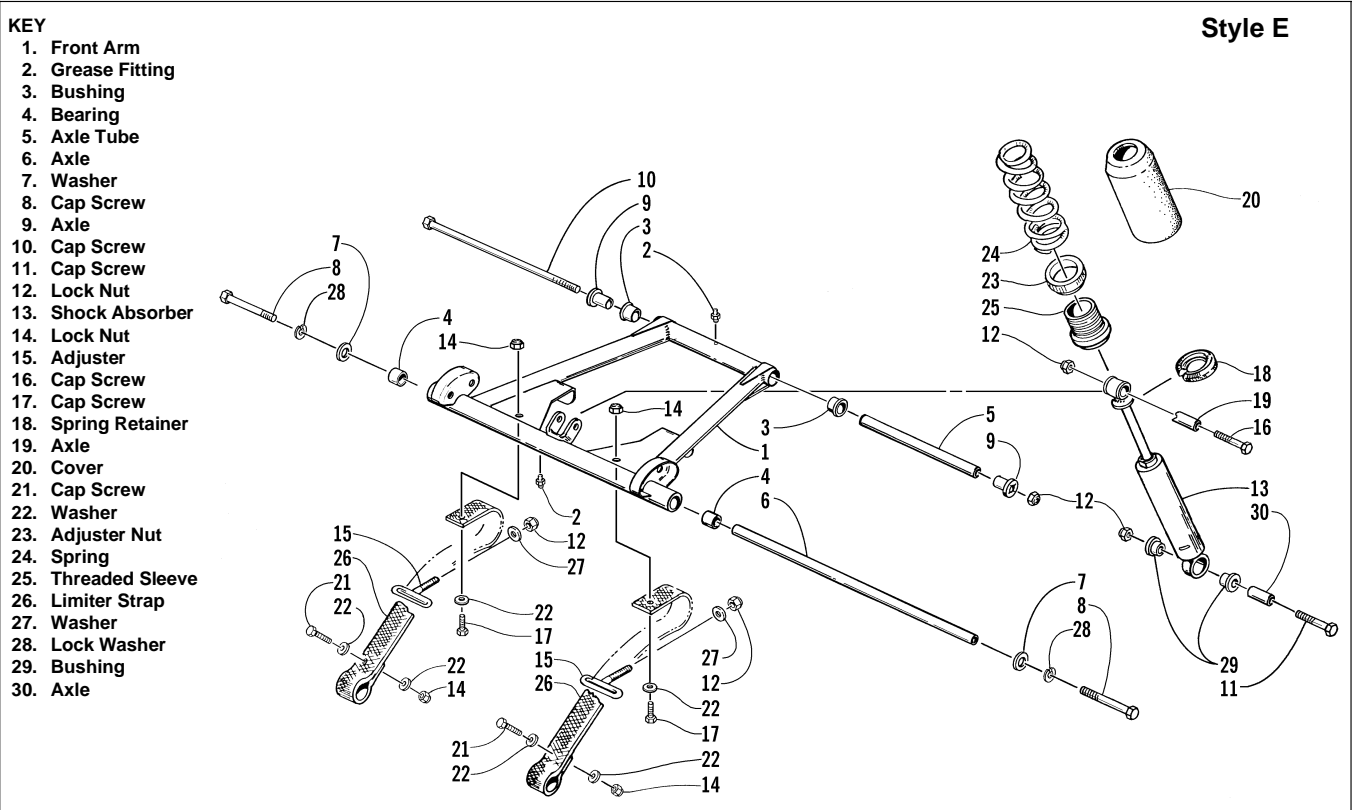
0734-612

Fig. 9-32



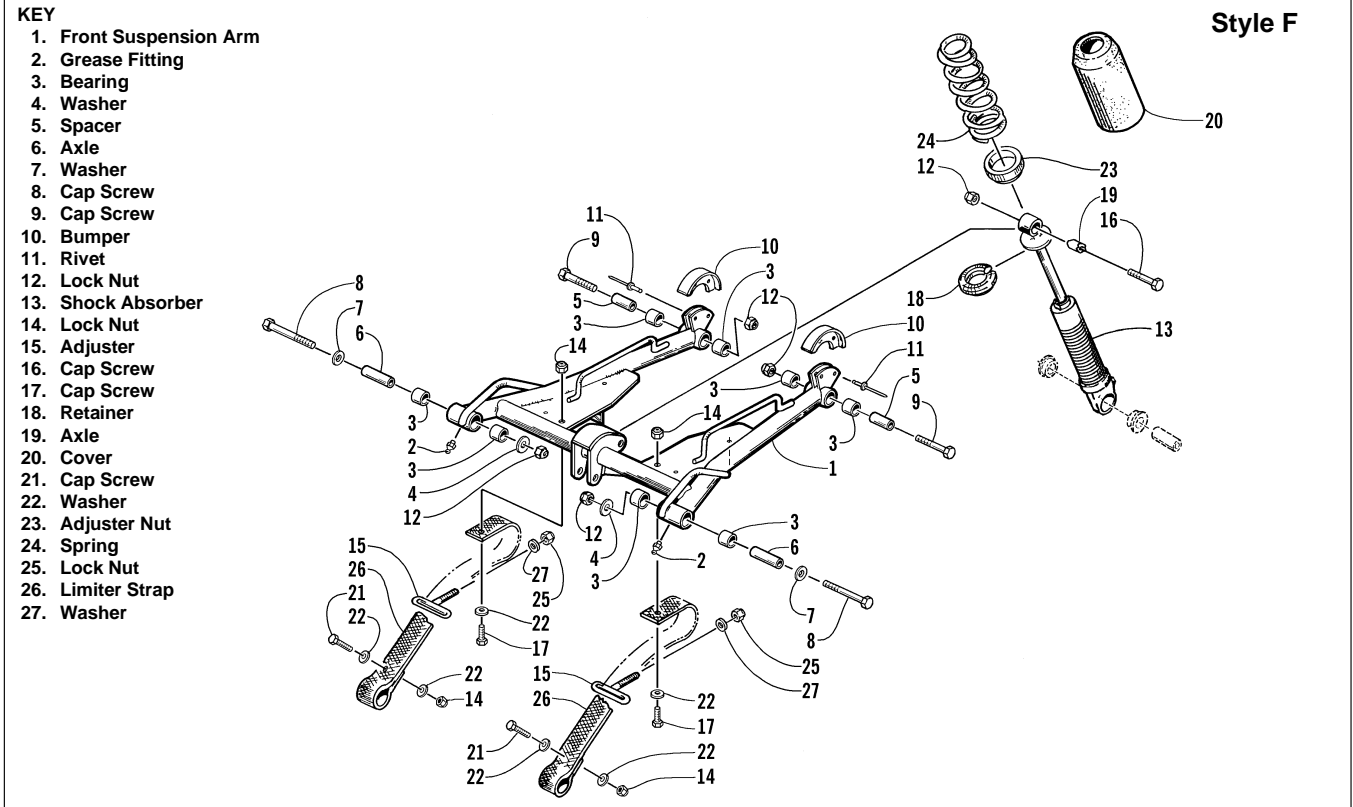
0731-891

Fig. 9-33



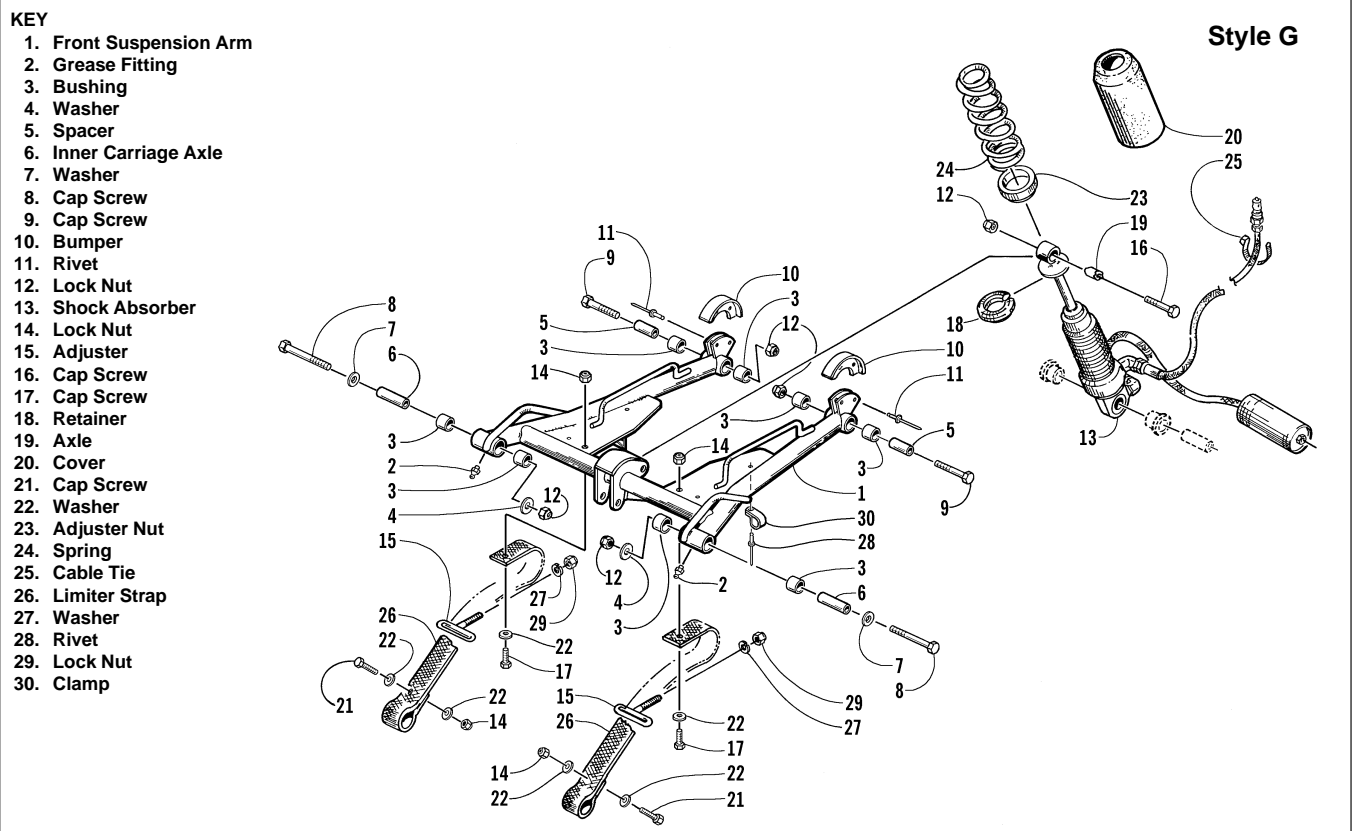
0733-384

Fig. 9-34



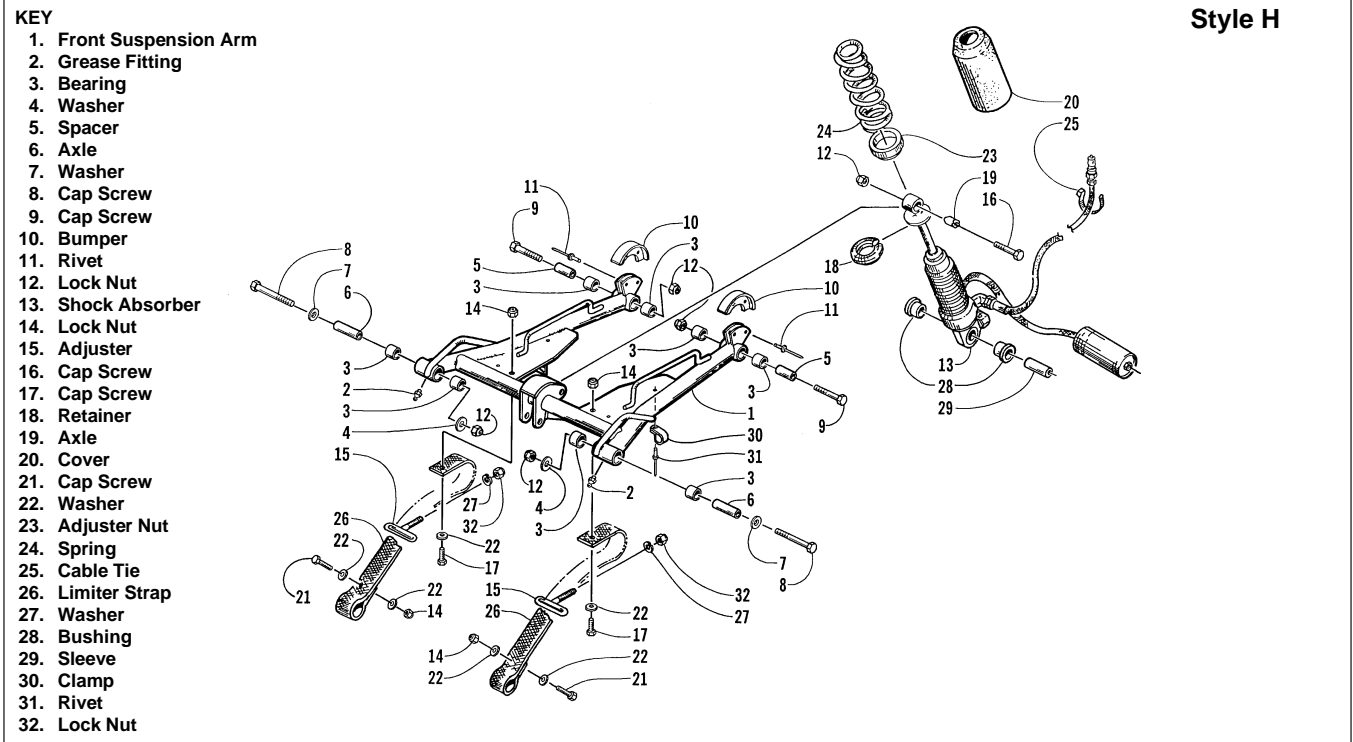
0735-036

Fig. 9-35



0735-415

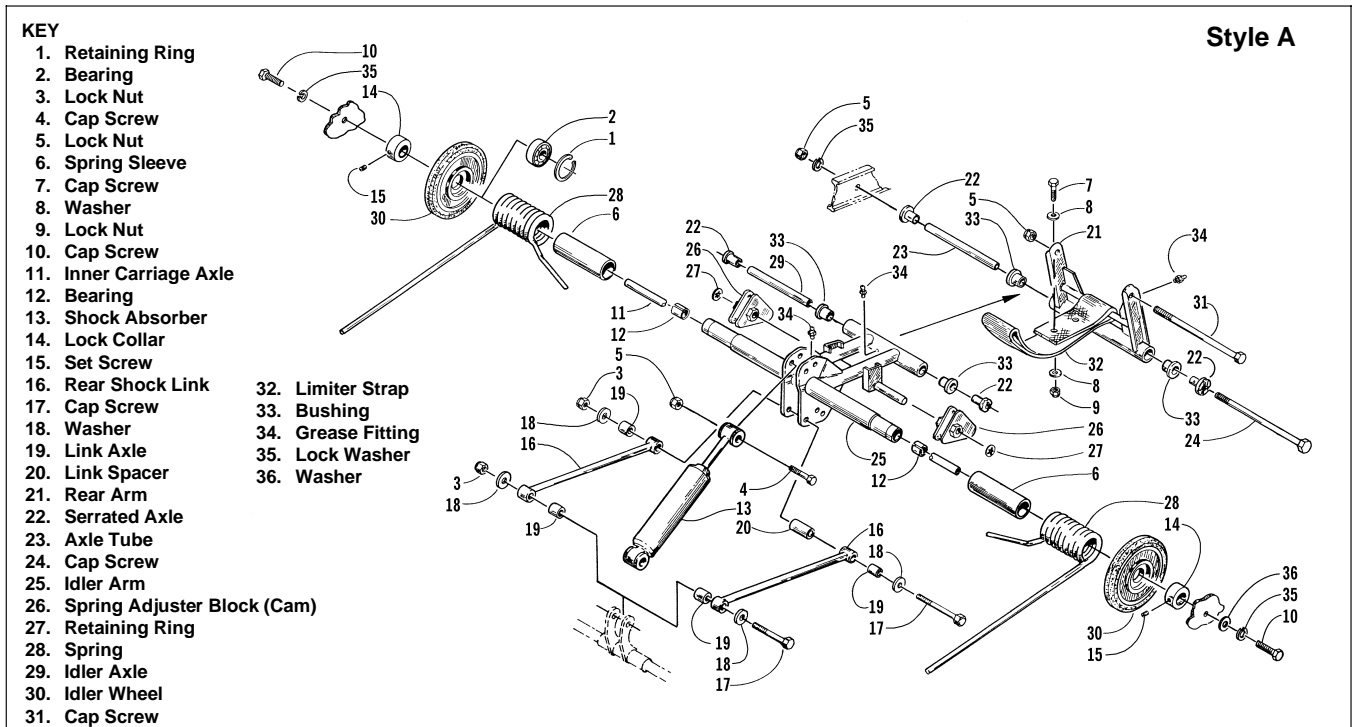
Fig. 9-36



0734-662

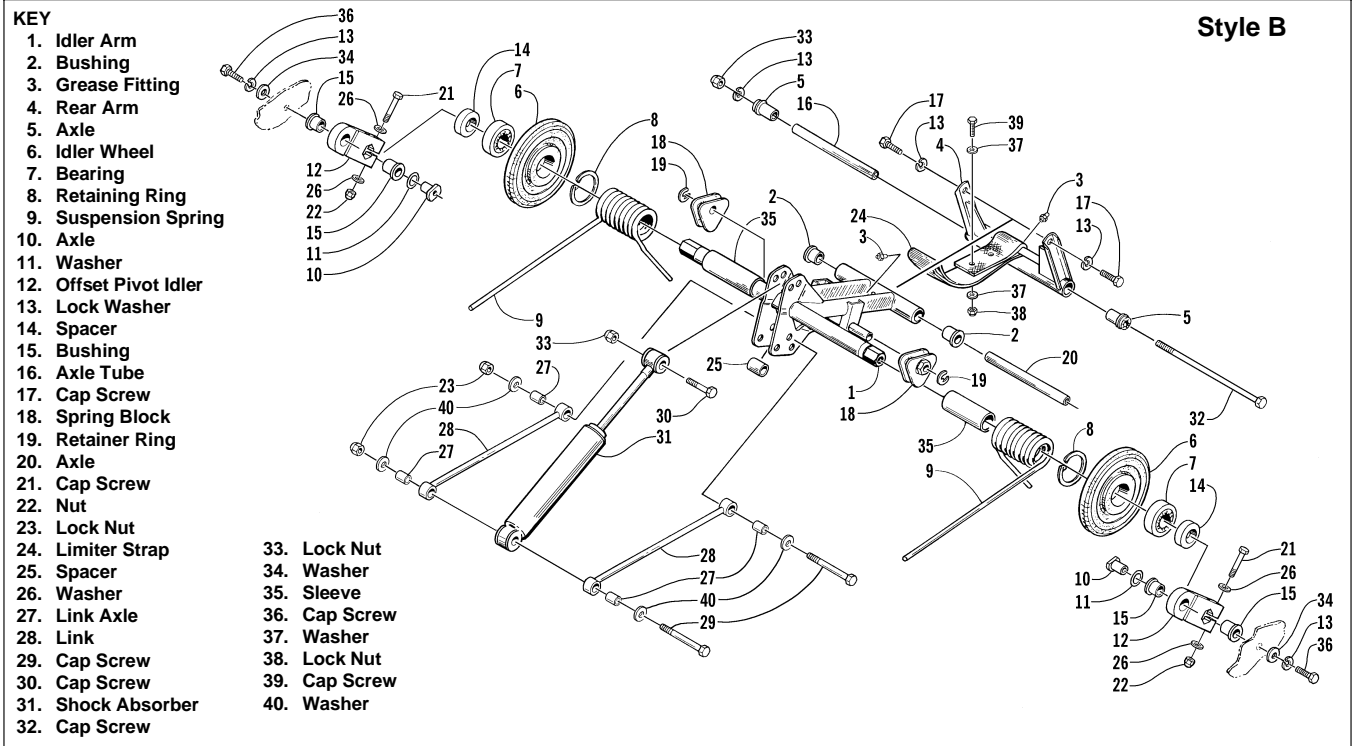
Rear Arm Schematics

Fig. 9-37



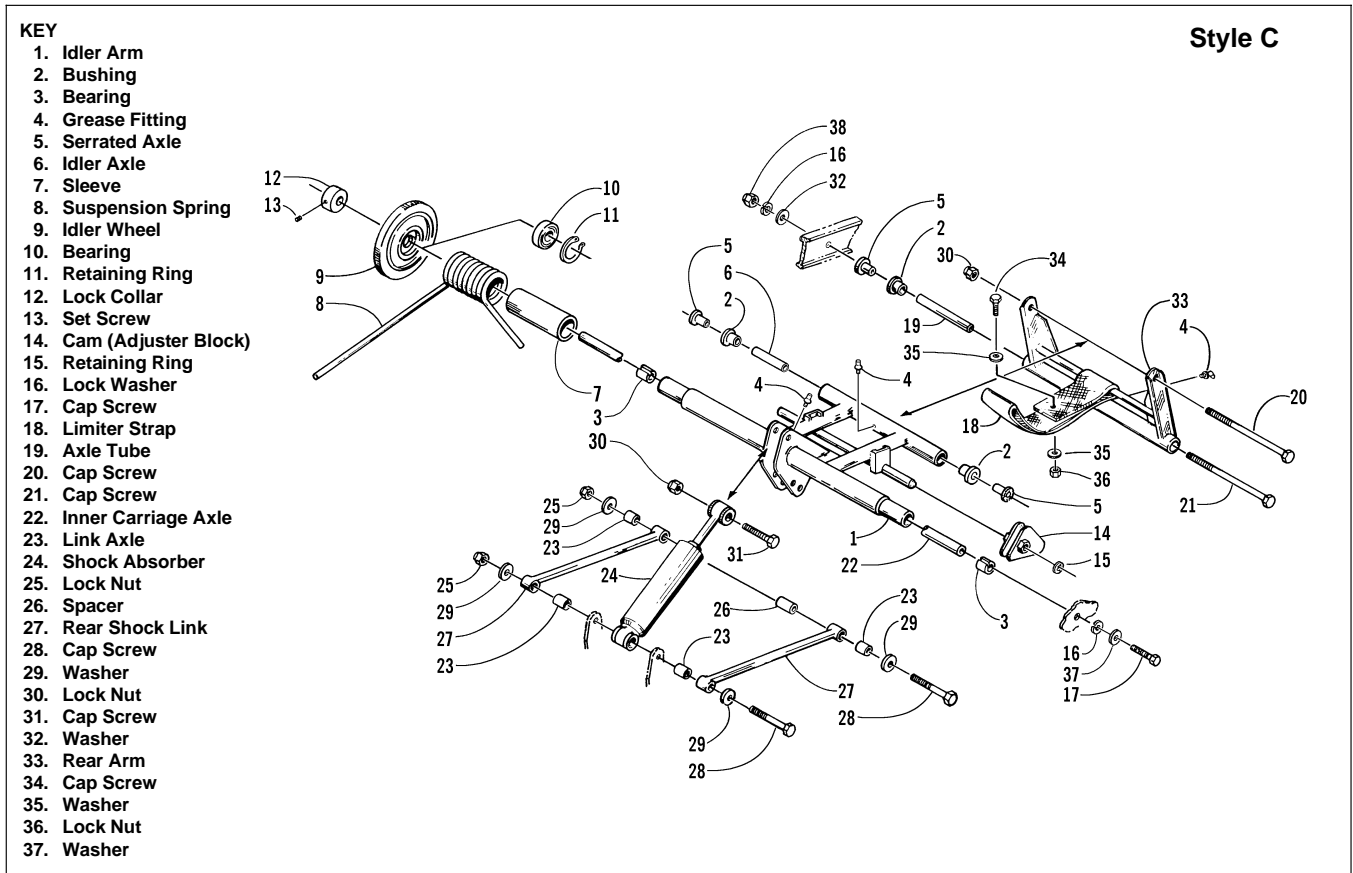
0735-075

Fig. 9-38



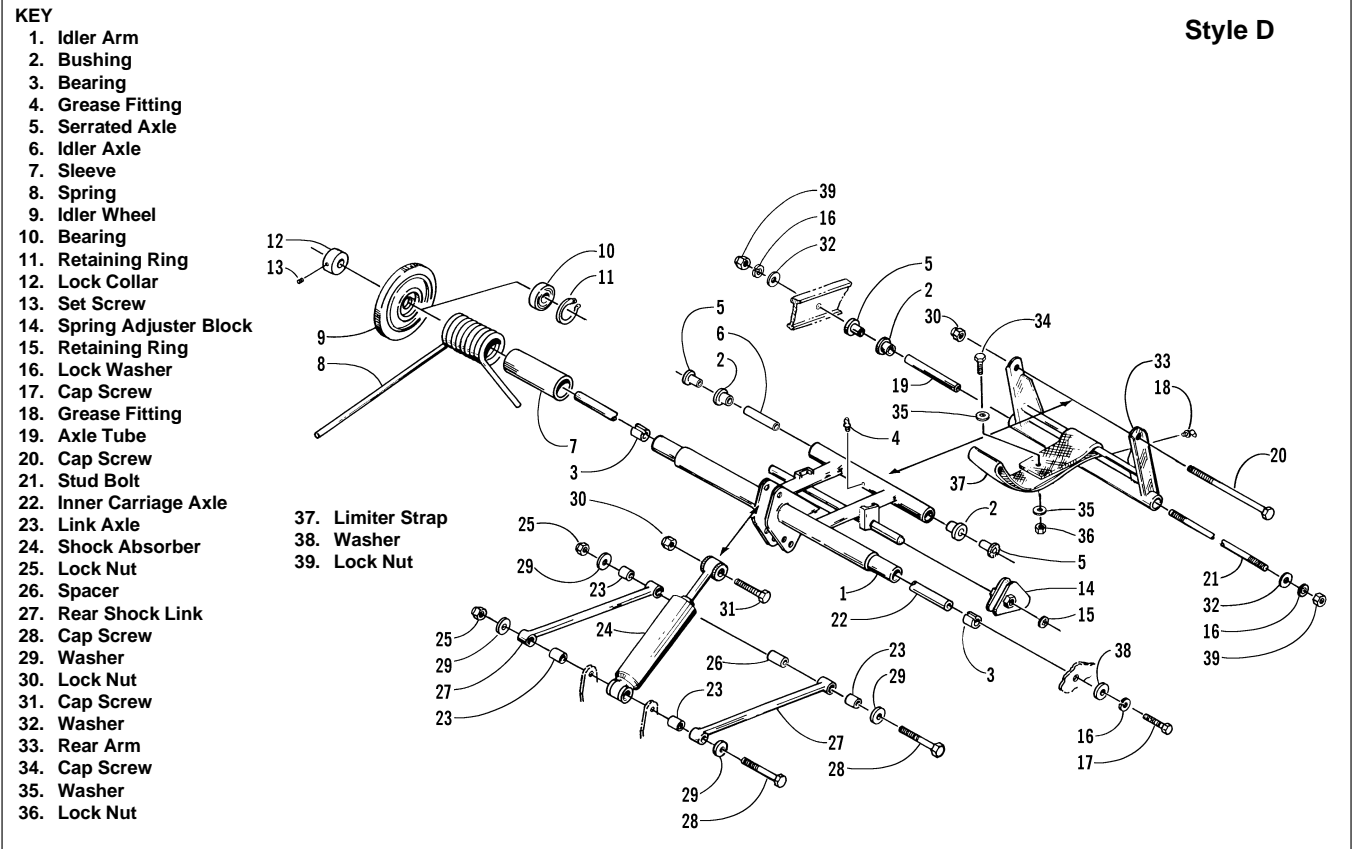
0735-042

Fig. 9-39



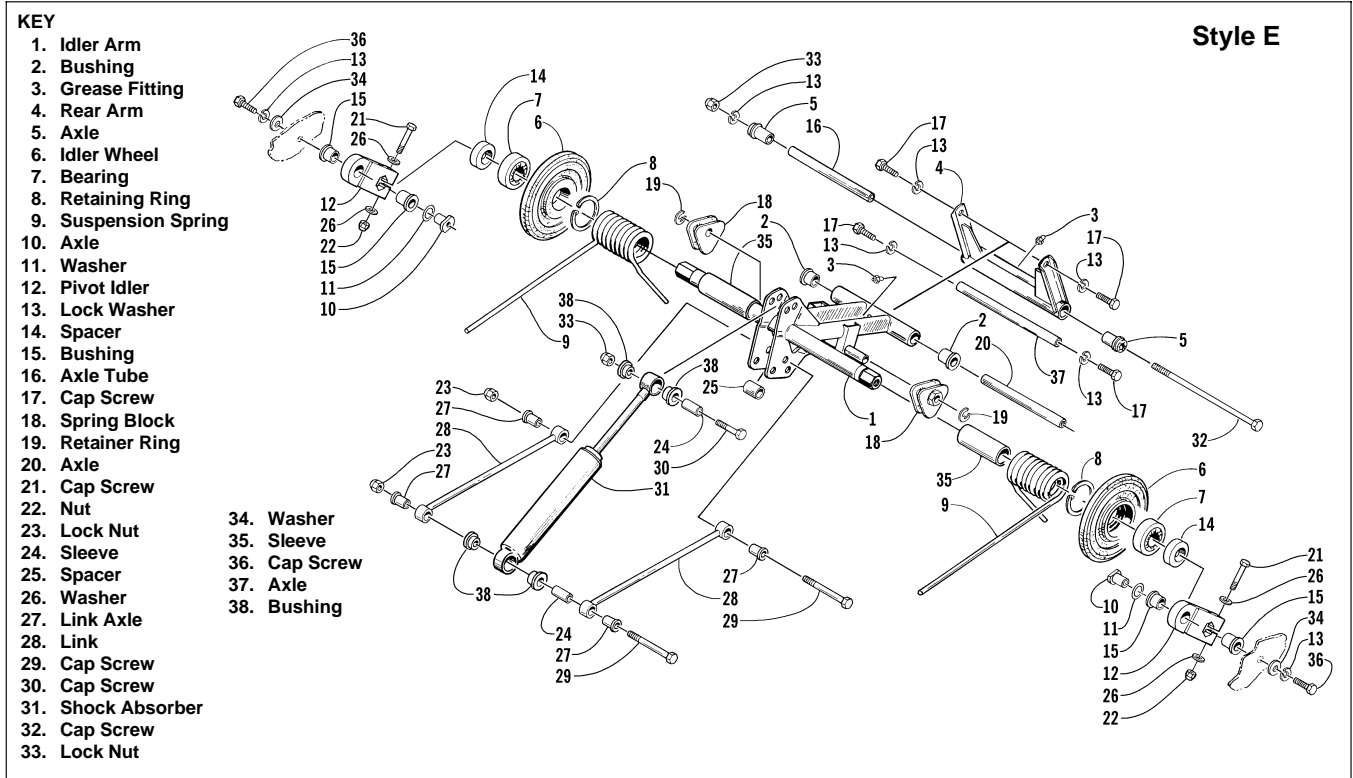
0735-010

Fig. 9-40



0734-941

Fig. 9-41



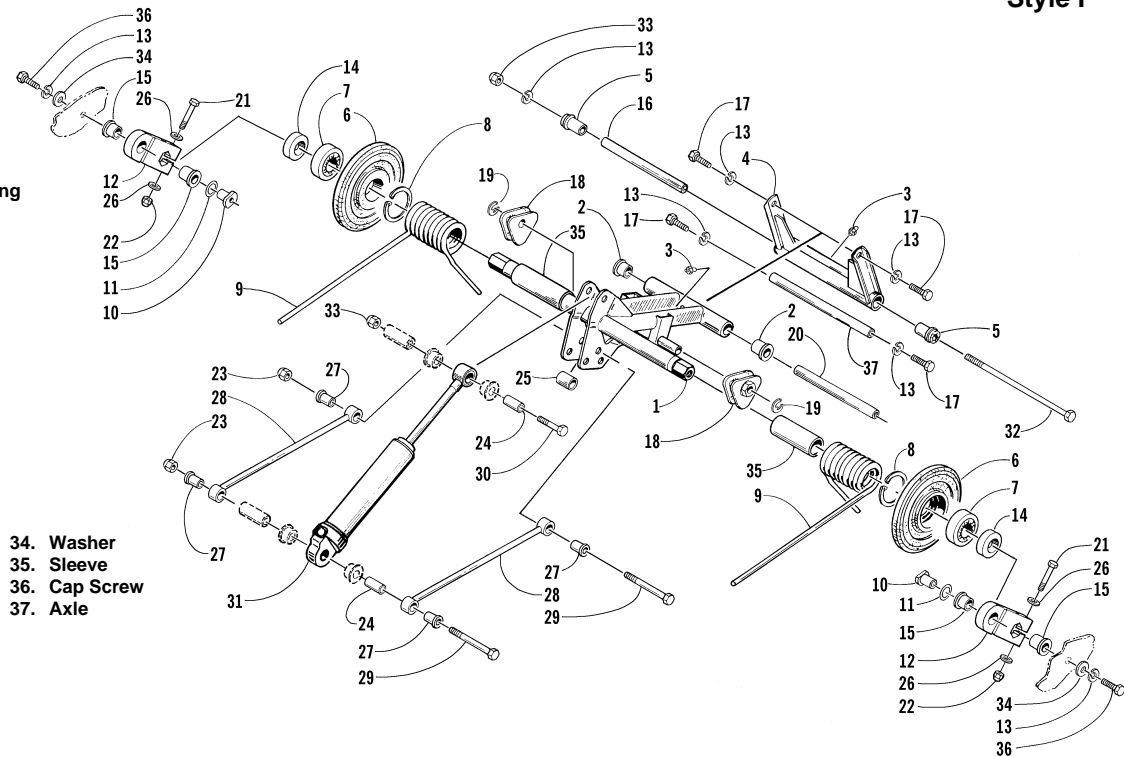
0734-972

Fig. 9-42

Style F

KEY

1. Idler Arm
2. Bushing
3. Grease Fitting
4. Rear Arm
5. Axle
6. Idler Wheel
7. Bearing
8. Retaining Ring
9. Suspension Spring
10. Axle
11. Washer
12. Offset Pivot Idler
13. Lock Washer
14. Spacer
15. Bushing
16. Axle Tube
17. Cap Screw
18. Spring Block
19. Retainer Ring
20. Axle
21. Cap Screw
22. Lock Nut
23. Lock Nut
24. Sleeve
25. Spacer
26. Washer
27. Link Axle
28. Link
29. Cap Screw
30. Cap Screw
31. Shock Absorber
32. Cap Screw
33. Lock Nut



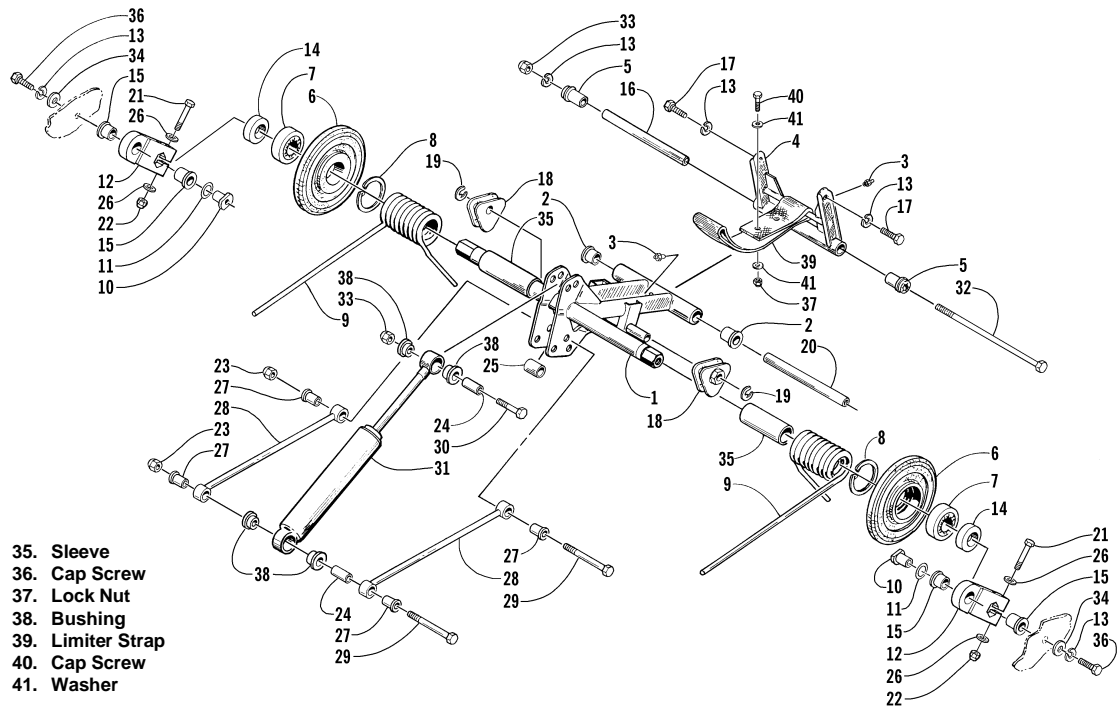
0735-038

Fig. 9-43

Style G

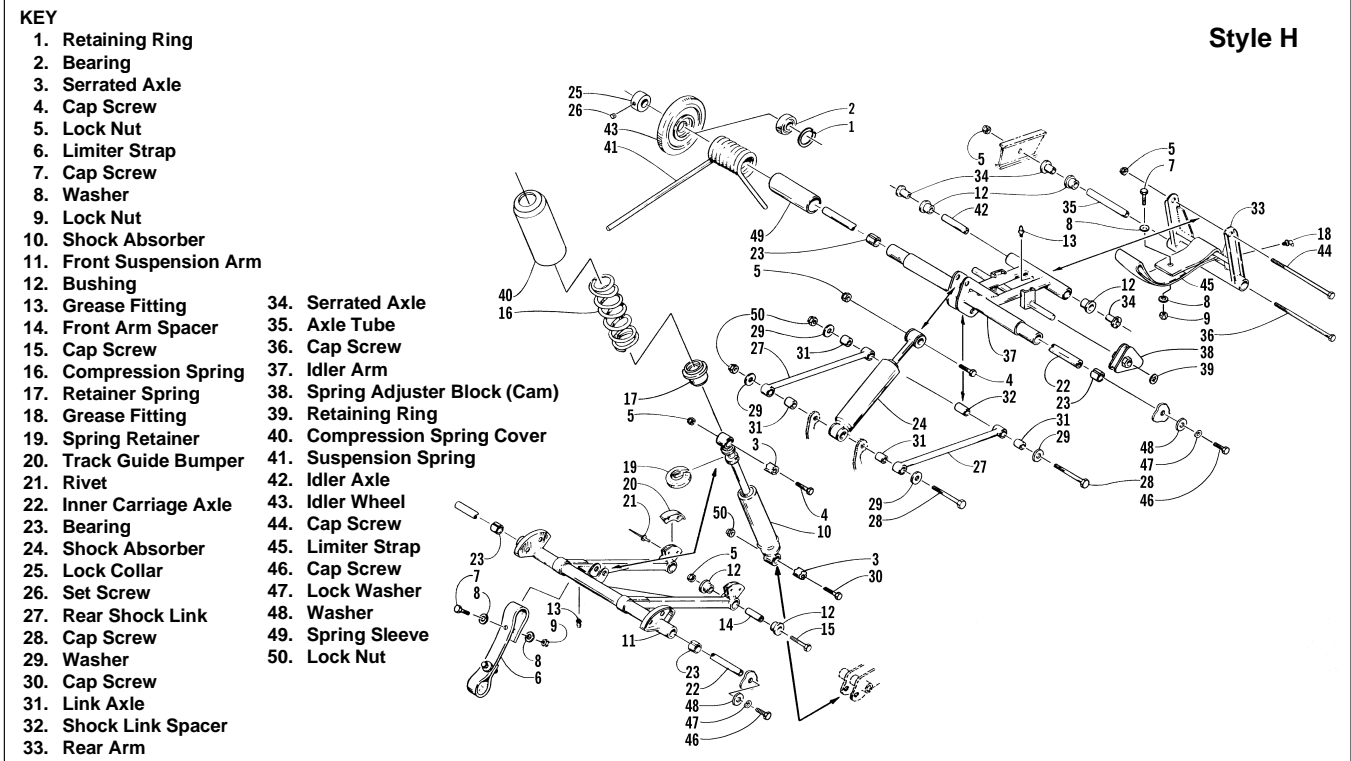
KEY

1. Idler Arm
2. Bushing
3. Grease Fitting
4. Rear Arm
5. Axle
6. Idler Wheel
7. Bearing
8. Retaining Ring
9. Suspension Spring
10. Axle
11. Washer
12. Offset Pivot Idler
13. Lock Washer
14. Spacer
15. Bushing
16. Axle Tube
17. Cap Screw
18. Spring Block
19. Retainer Ring
20. Axle
21. Cap Screw
22. Lock Nut
23. Lock Nut
24. Sleeve
25. Spacer
26. Washer
27. Link Axle
28. Link
29. Cap Screw
30. Cap Screw
31. Shock Absorber
32. Cap Screw
33. Lock Nut
34. Washer
35. Sleeve
36. Cap Screw
37. Lock Nut
38. Bushing
39. Limiter Strap
40. Cap Screw
41. Washer



0735-317

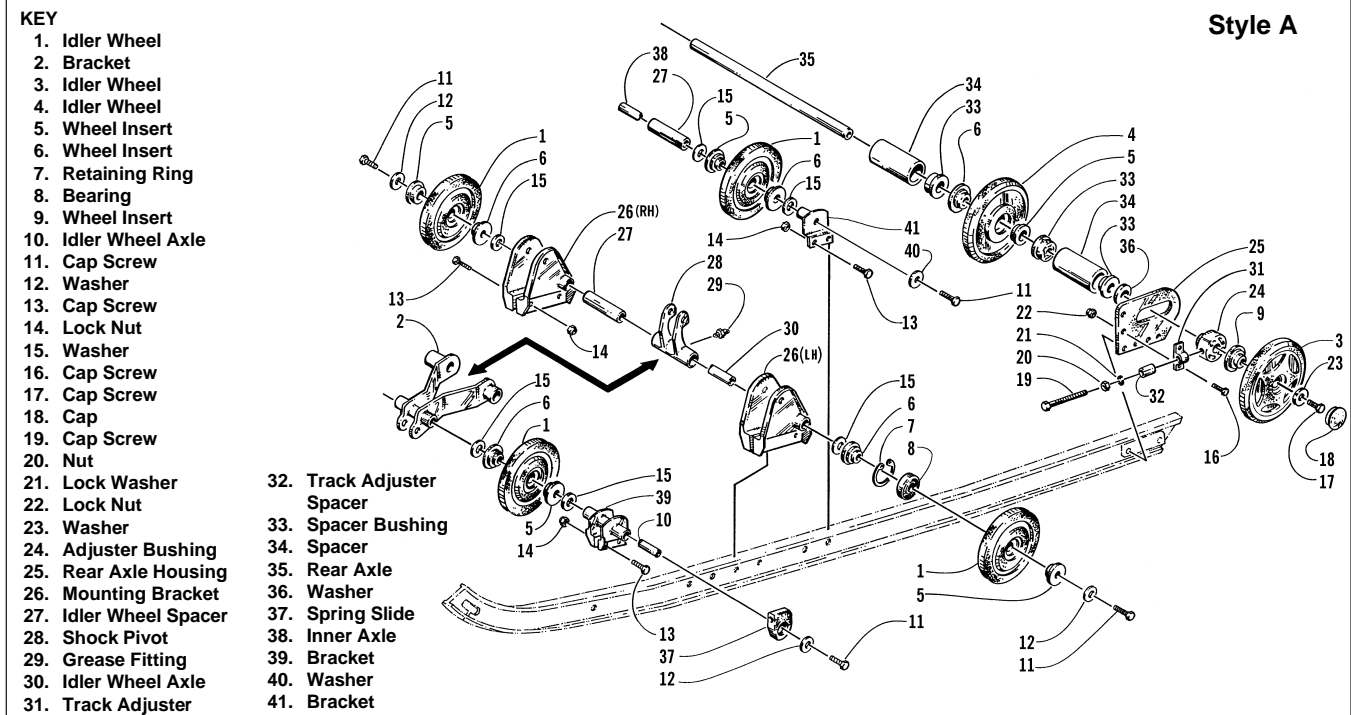
Fig. 9-44



0734-571

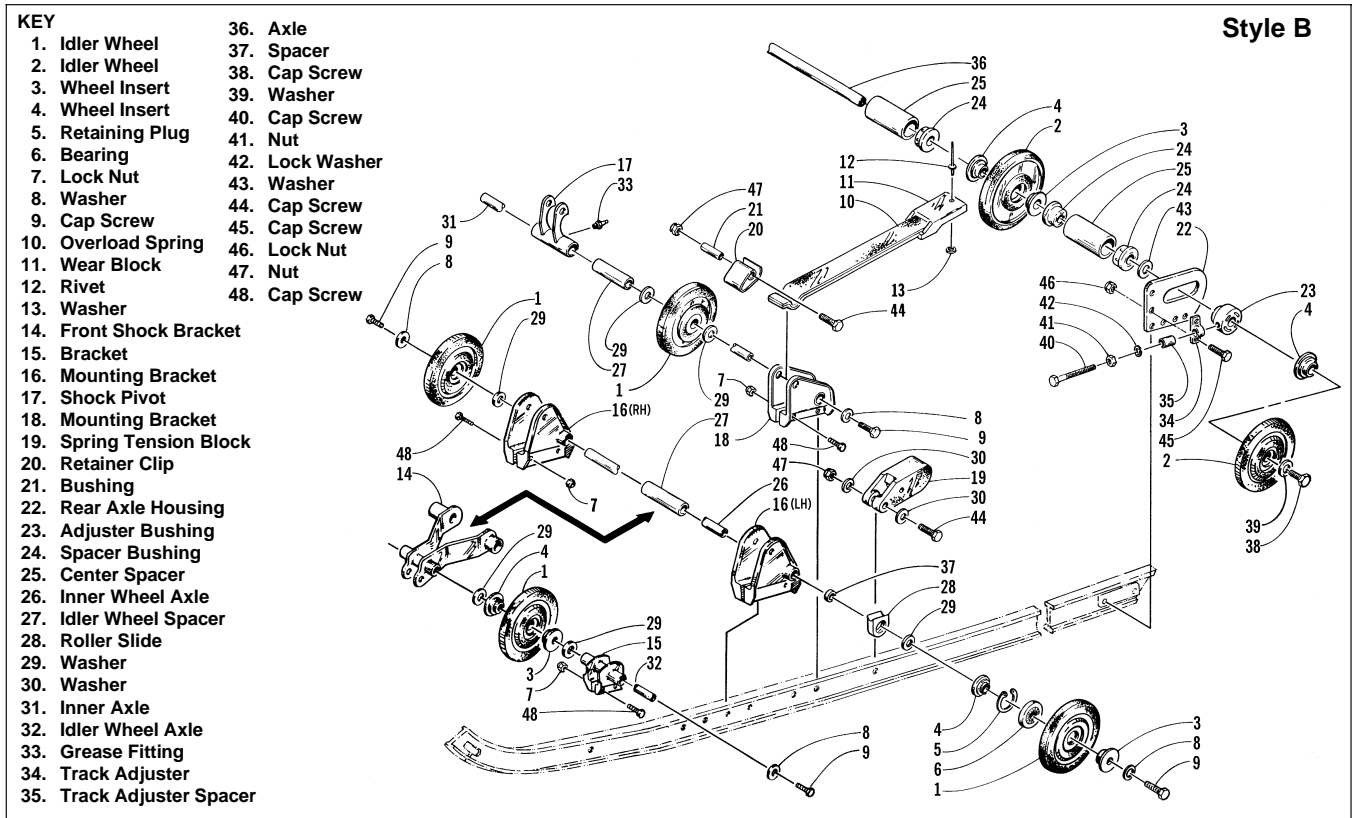
Idler Wheels Schematics

Fig. 9-45



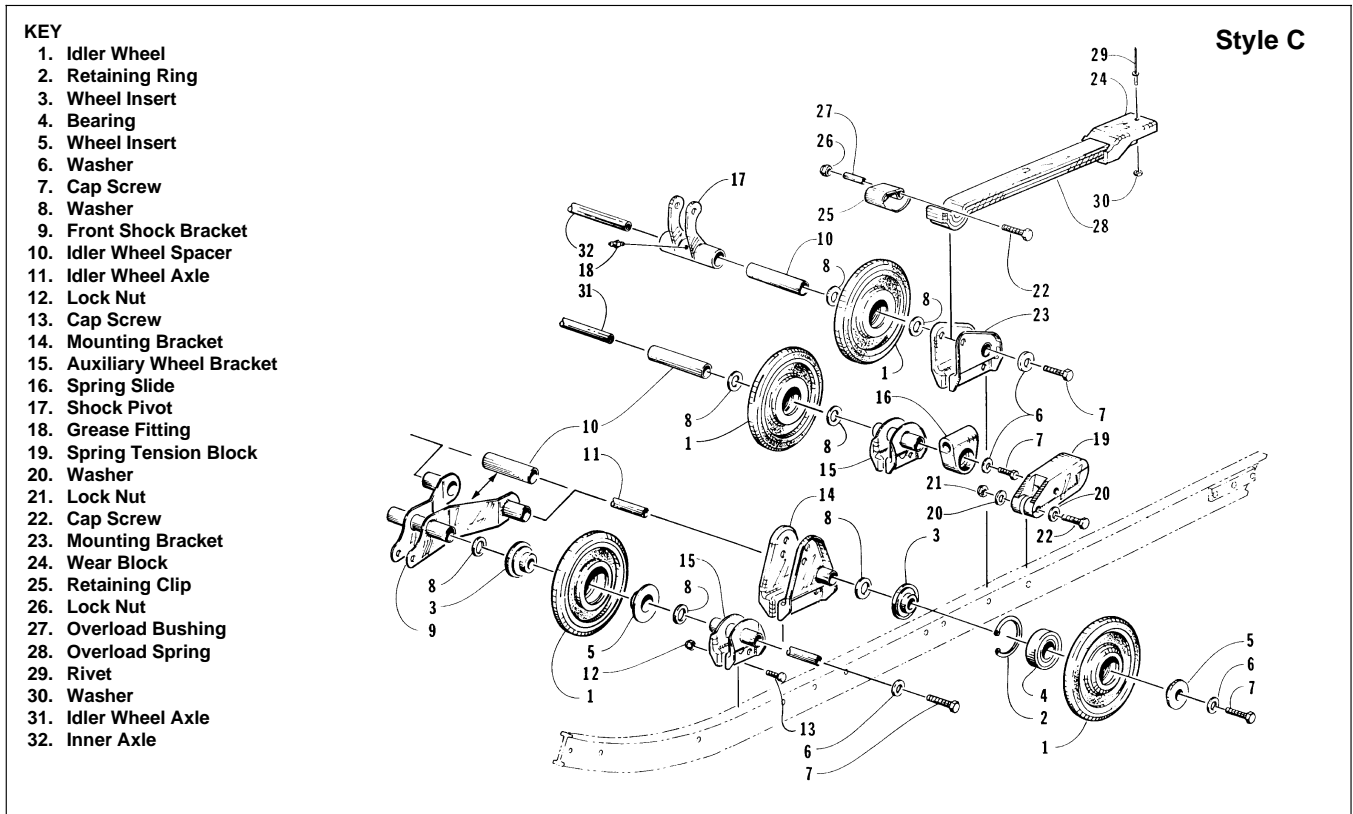
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Fig. 9-46



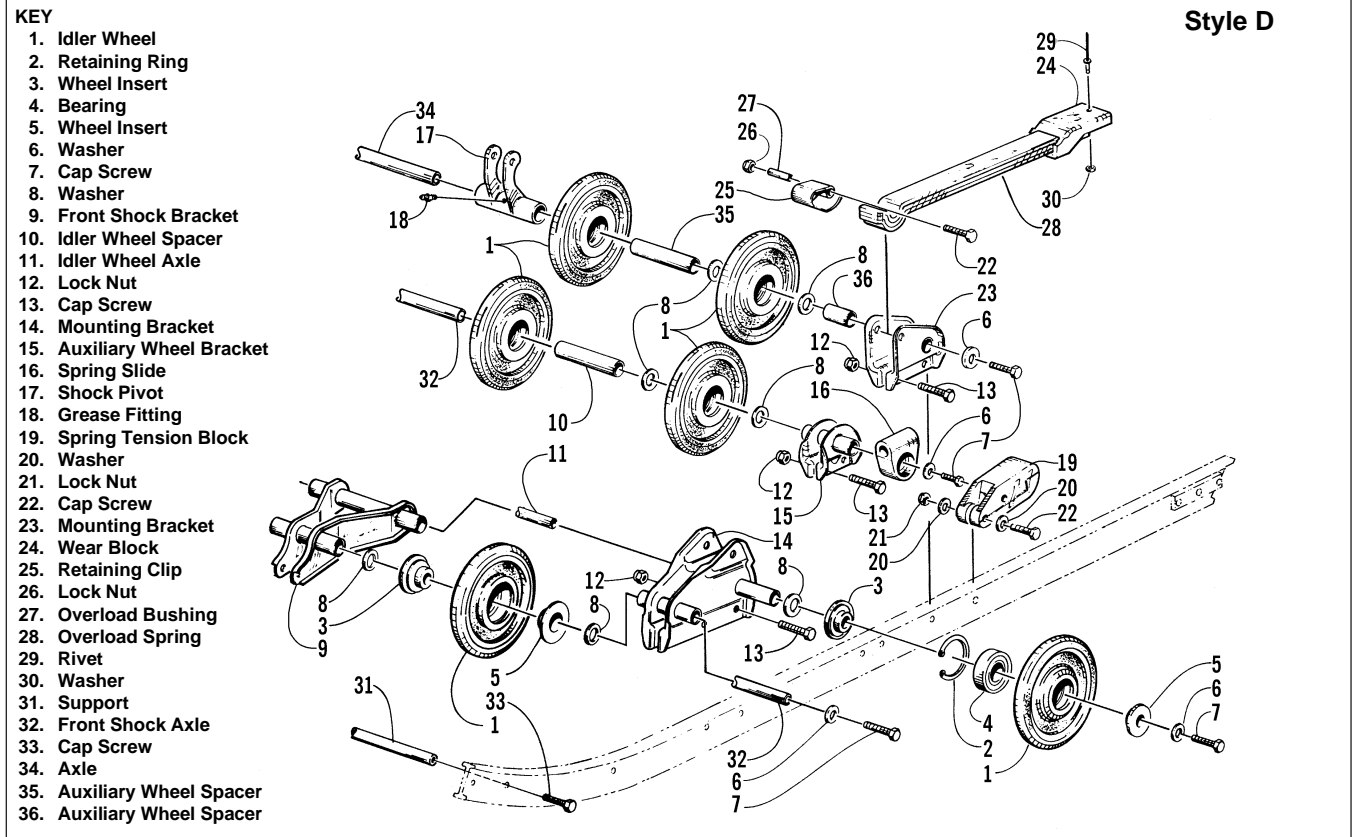
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Fig. 9-47



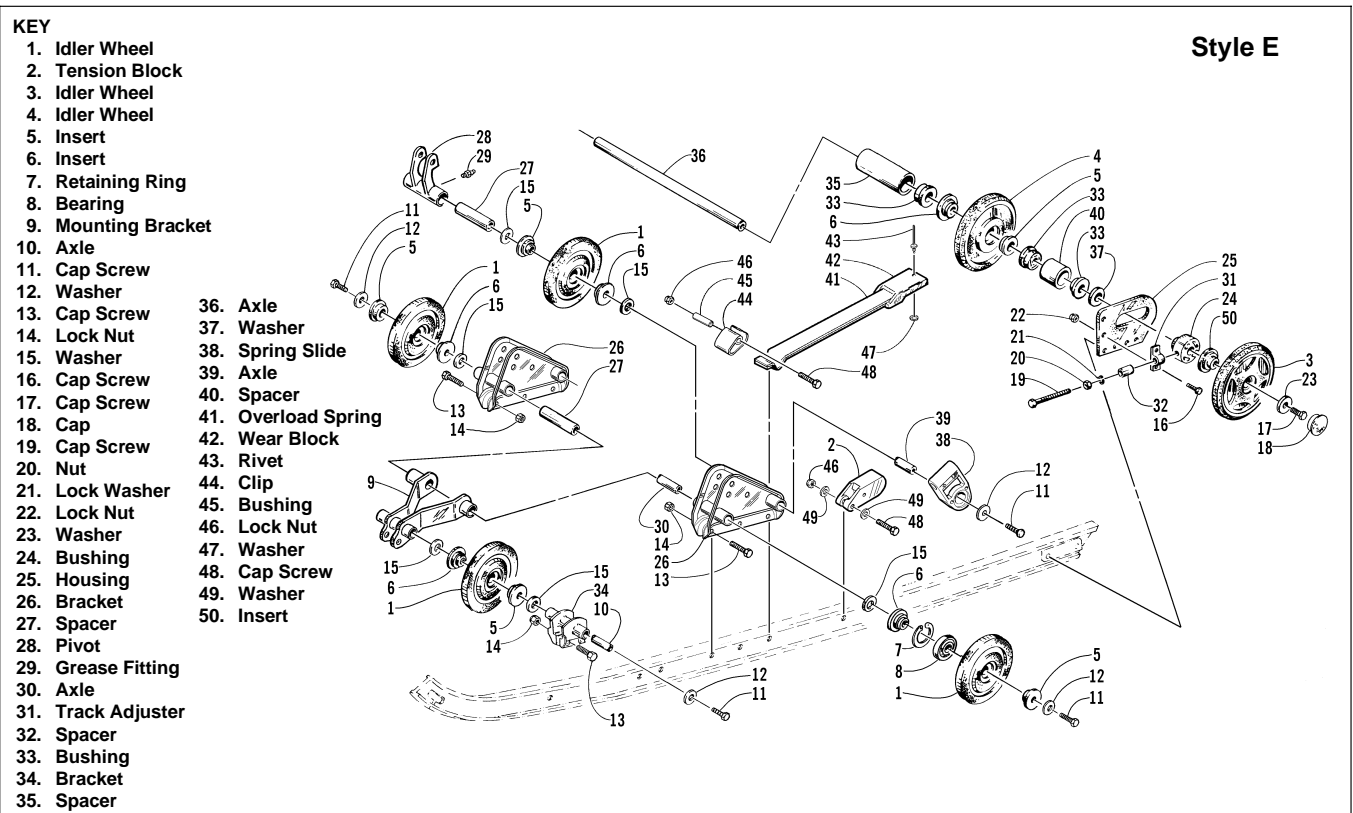
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Fig. 9-48



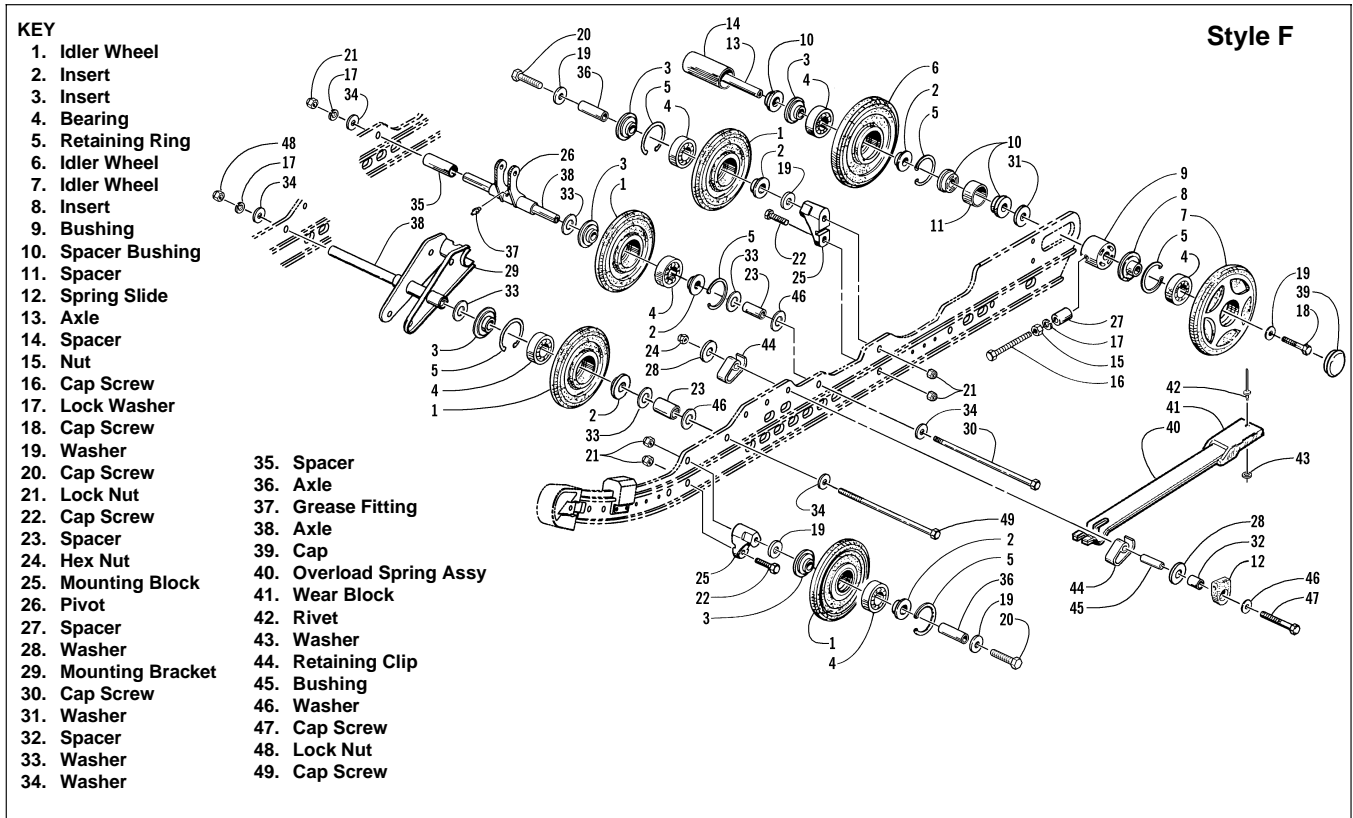
0734-684

Fig. 9-49



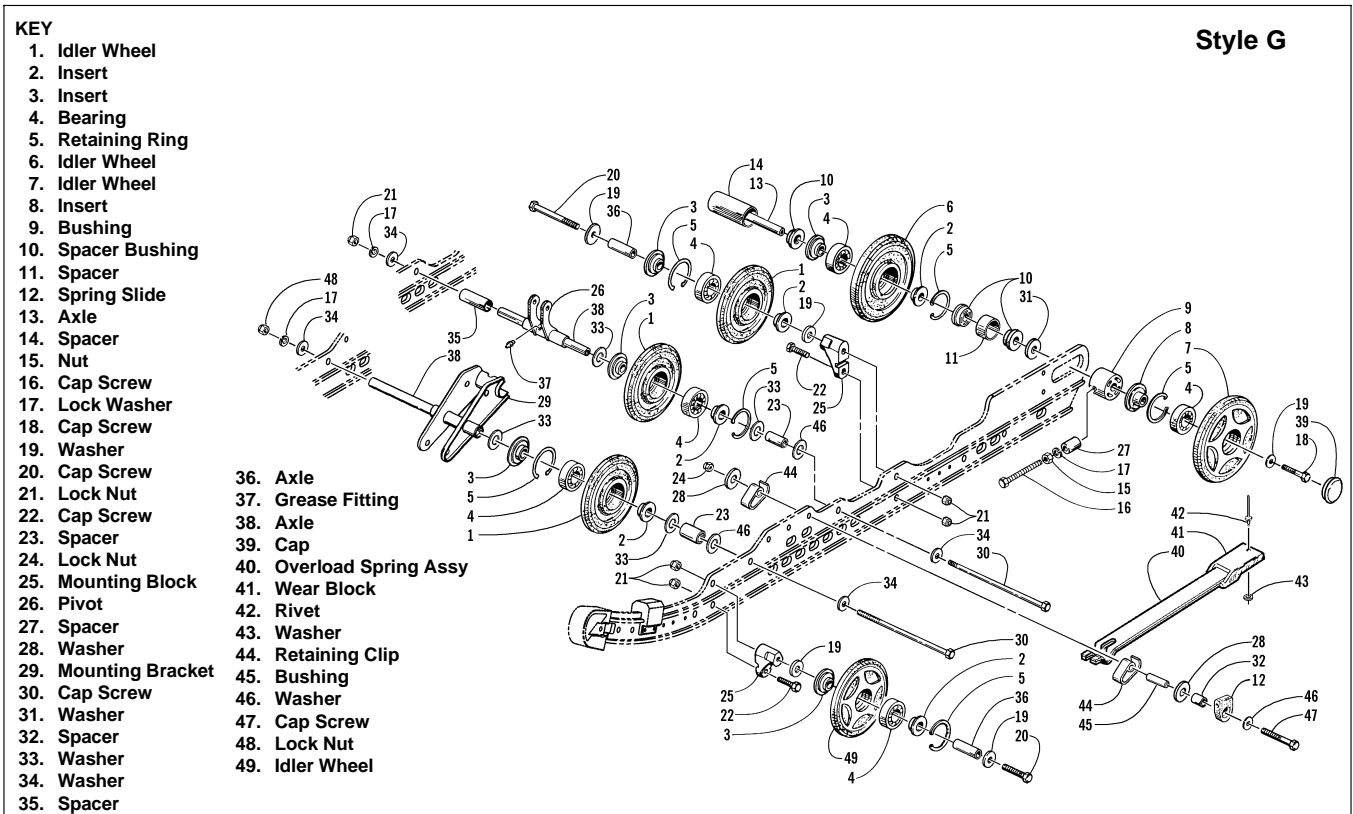
0735-080

Fig. 9-50



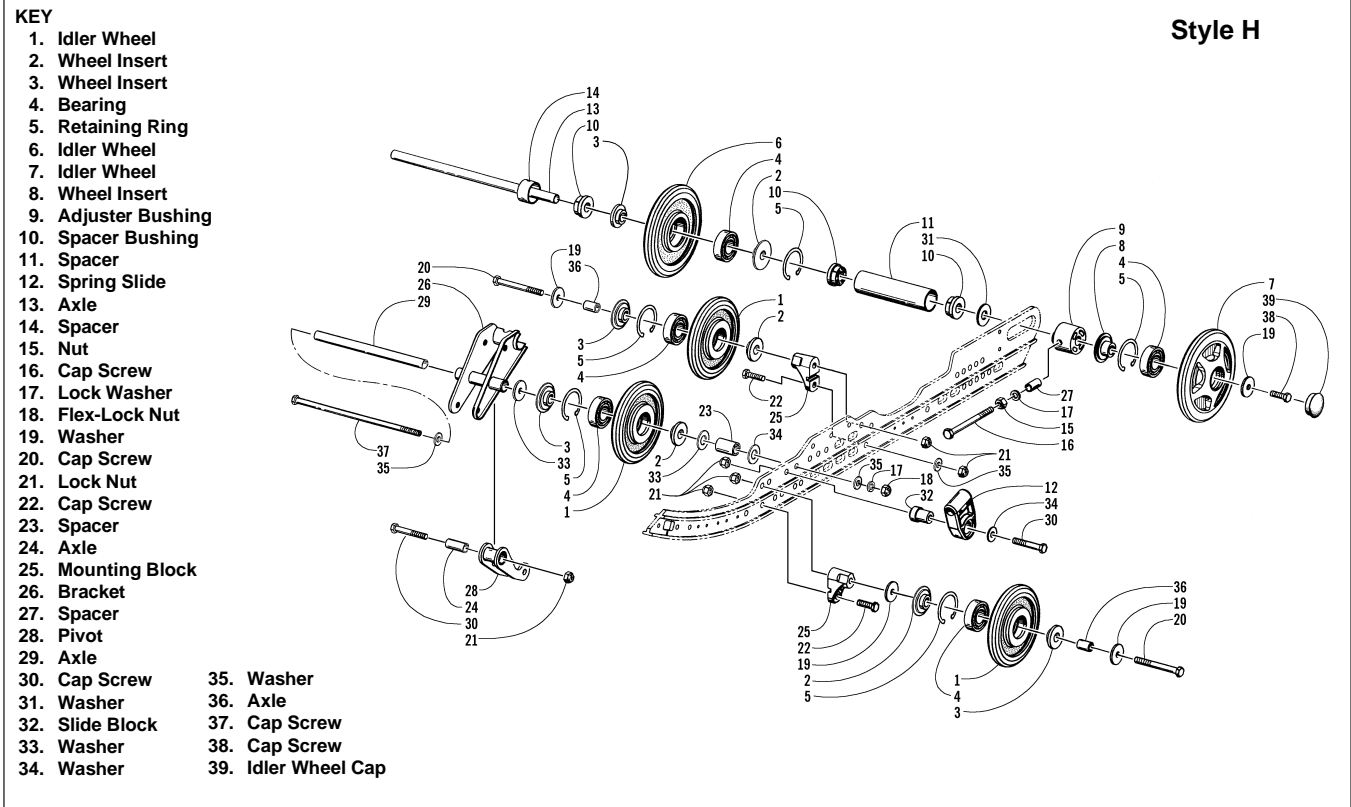
0735-158

Fig. 9-51



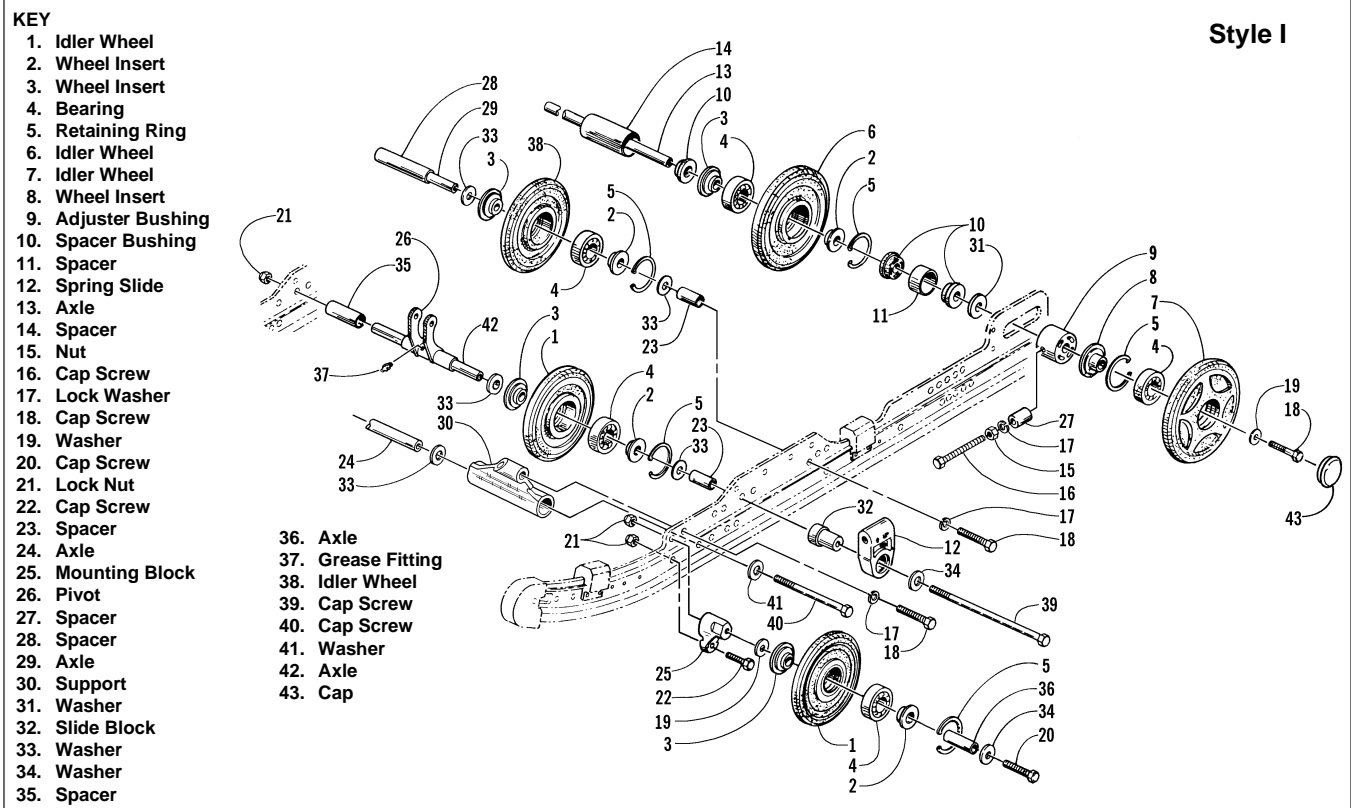
0735-081

Fig. 9-52



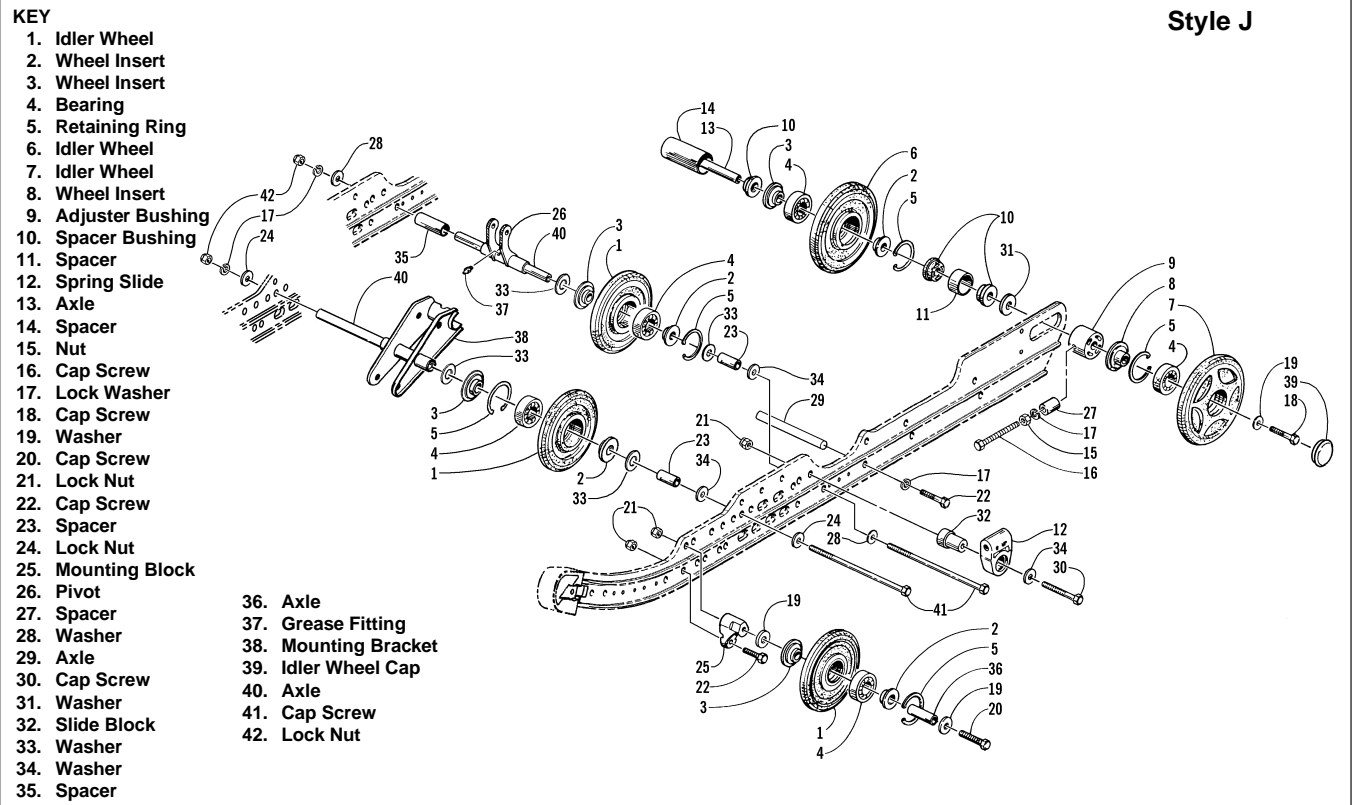
0734-970

Fig. 9-53



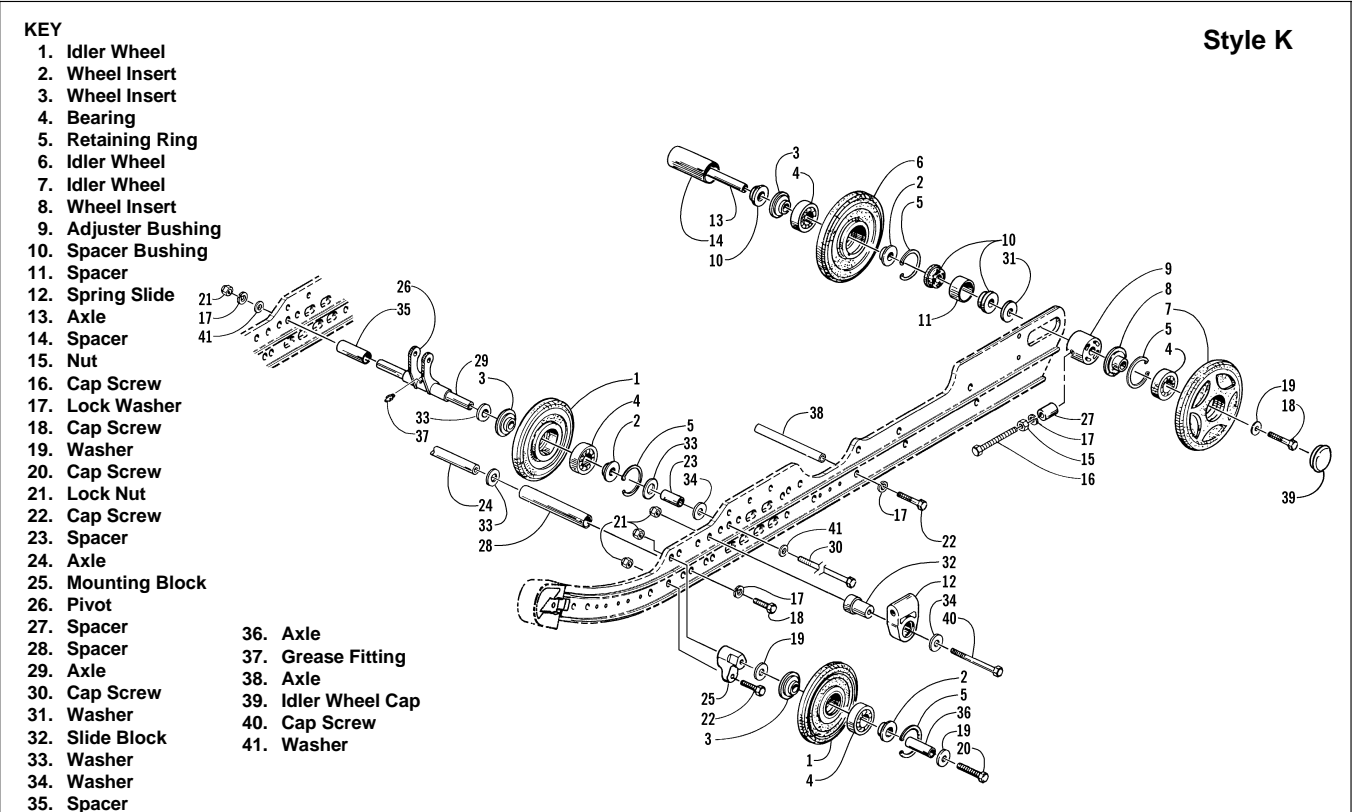
0734-377

Fig. 9-54



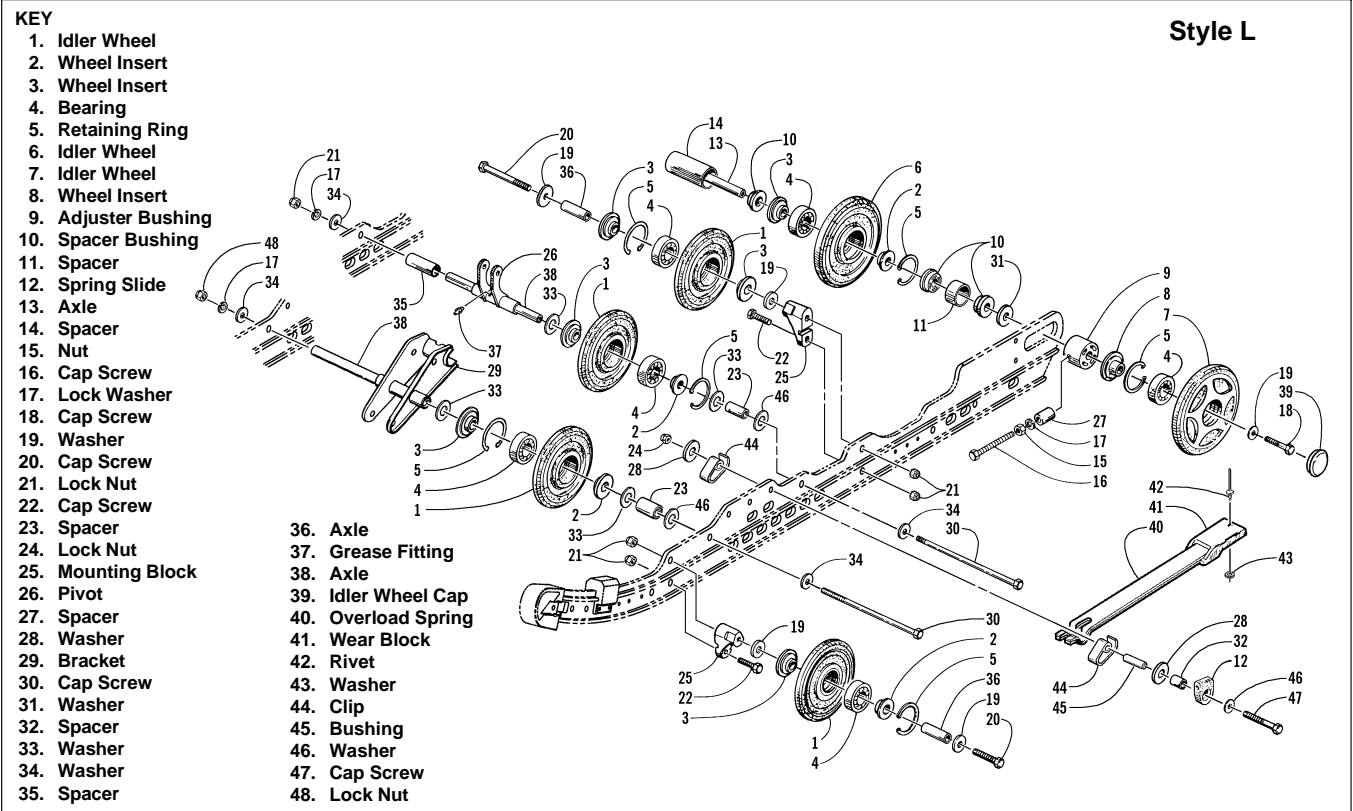
0735-212

Fig. 9-55



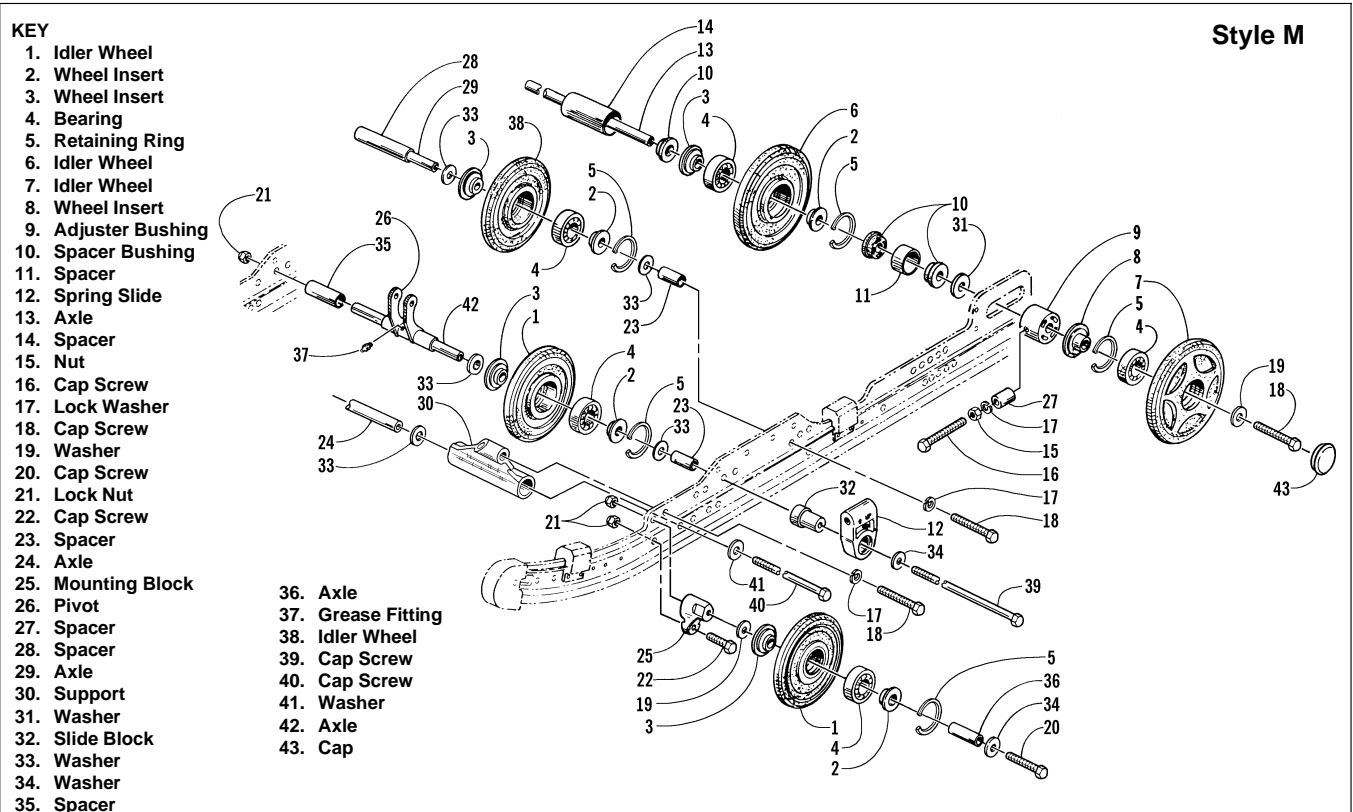
0735-246

Fig. 9-56



0735-150

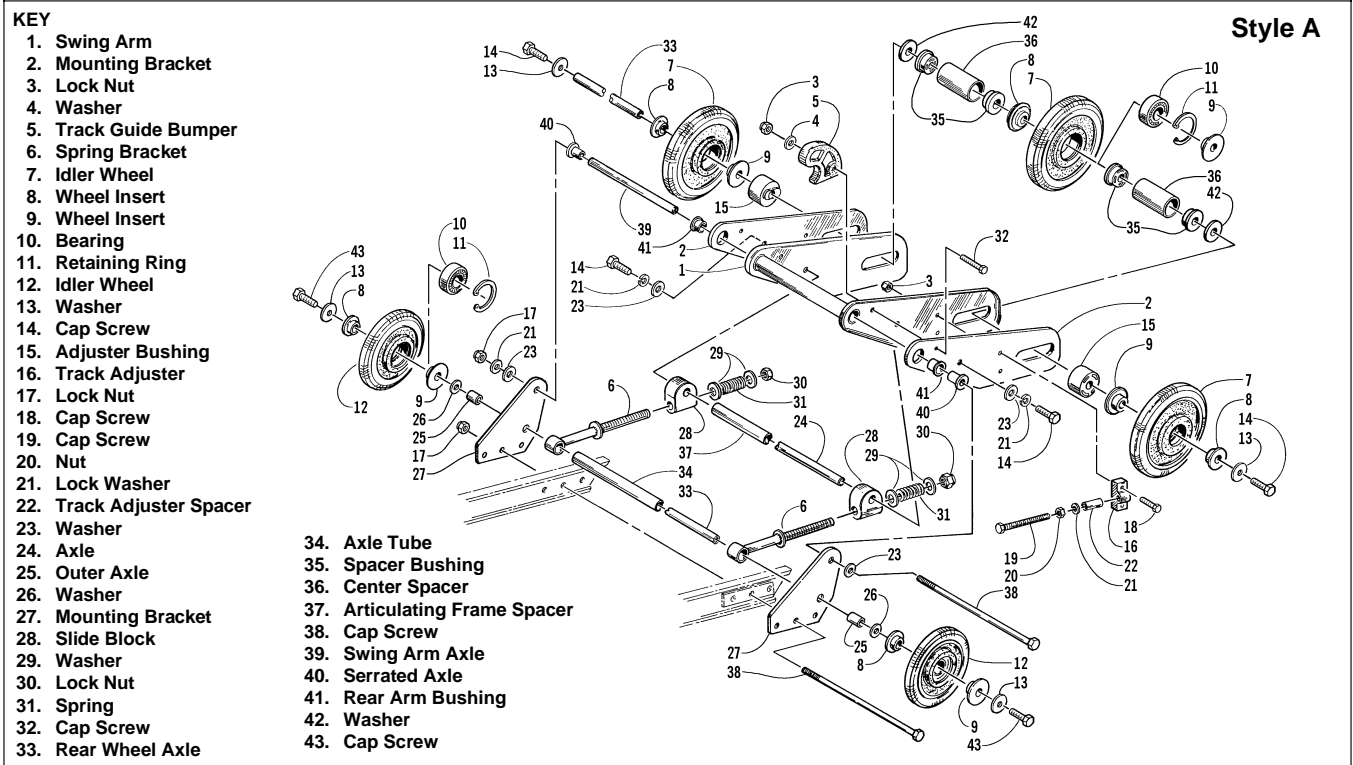
Fig. 9-57



0735-192

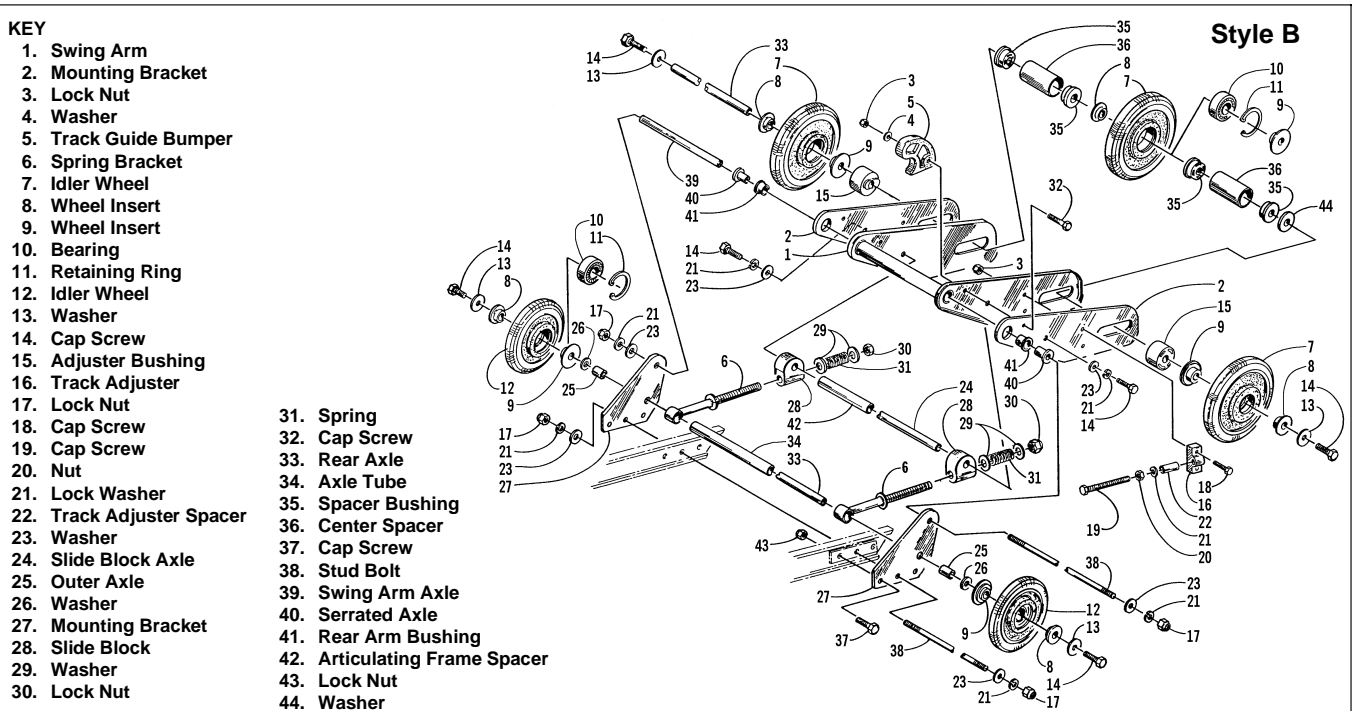
Articulating Skid Frame Schematics

Fig. 9-58



0734-927

Fig. 9-59



0734-939

Repair Procedure 1 - Track/Rear Suspension

This Track/Rear Suspension sub-section (Repair Procedure 1) has been organized so each procedure can be completed individually and efficiently. Each sub-section has (as necessary) Removing, Disassembling, Cleaning and Inspecting, Assembling, and Installing procedures.

■ **NOTE:** Some photographs used in this sub-section are used for clarity purposes only and are not designed to depict actual conditions.

Removing Skid Frame

■ **NOTE:** Many service procedures can be performed without removing the skid frame. Closely observe the note introducing each sub-section for this important information.

1. On models with remote adjuster, rotate the remote reservoir adjuster knob counterclockwise to reduce pressure on the skid frame front shock absorber.
2. On models with the remote adjuster, disconnect the quick-adjuster located under the driven pulley; then route the hose out of tunnel and out of the holding bracket on the inside of the tunnel.

CAUTION

If this is not done, damage to the hose may result.

3. Loosen the jam nuts and two track-tension adjusting bolts.

Fig. 9-60



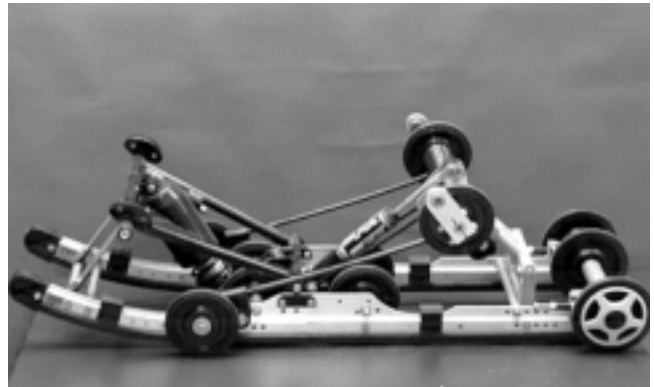
AG670D

4. Place a support stand under the rear bumper; then while holding the flared bushing, remove the rear cap screws securing the skid frame to the tunnel. Account for lock washers and flat washers.

■ **NOTE:** The support stand should hold the snowmobile level but not raised off the floor.

5. Remove the front cap screws securing the skid frame to the tunnel. Account for a flat washer and a lock washer.
6. Remove the support stand; then tip the snowmobile onto one side using a piece of cardboard to protect against scratching. Remove the skid frame.

Fig. 9-61



AG671D

Wear Strips

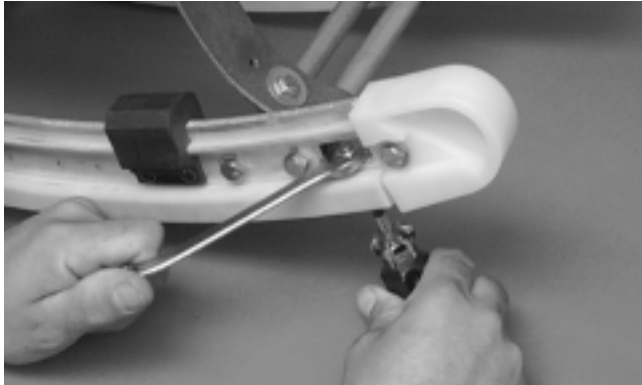
REMOVING

■ **NOTE:** It is possible to remove and install a wear strip without removing the skid frame. To do this, remove the machine screw and lock nut securing the wear strip at the front of the slide rail; then align the wear strip with openings (windows) in the track and drive it rearward off the slide rail. Apply low-temperature grease to the new wear strip and slide rail; then align the wear strip with openings (windows) in the track and drive it forward onto the slide rail. Secure with the machine screw and lock nut.

■ **NOTE:** The skid frame should be removed for this procedure (see Removing Skid Frame in this sub-section).

1. Remove the machine screw and lock nut securing the wear strip to the front of the slide rail.

Fig. 9-62

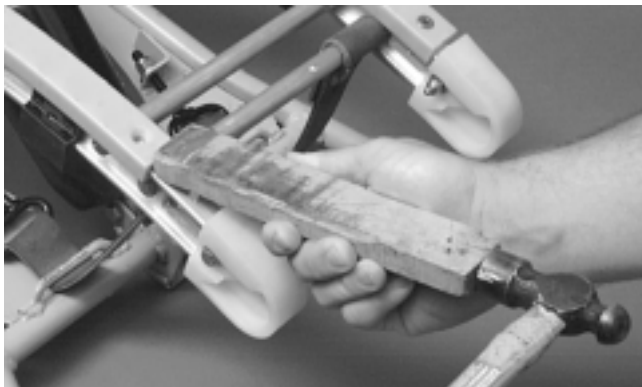


AG504D

2. Using a pipe wrench and starting from either end, hook the edge of the wear strip with the pipe wrench jaw and twist the wear strip off the slide rail. Move the pipe wrench 7.5 cm (3 in.) and again twist the wear strip off the rail. Repeat this procedure until the wear strip is free of the rail.

■ **NOTE:** The wear strip can also be driven off the slide rail; however, it is quicker to use a pipe wrench.

Fig. 9-63



AG505D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

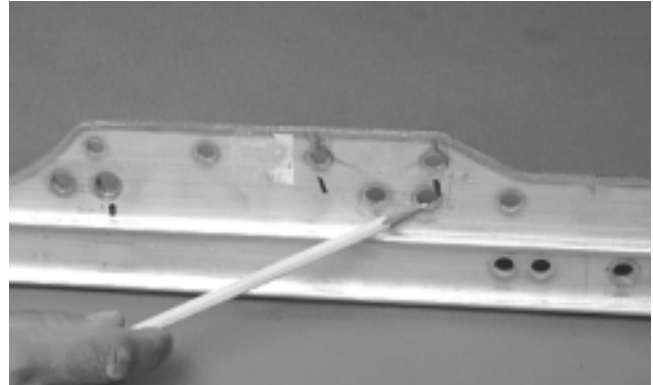
1. Clean the slide rail using parts-cleaning solvent and compressed air.

⚠ **WARNING**

Always wear an approved pair of safety glasses when using compressed air.

2. Inspect the slide rail for cracks. If any cracks are found, replace the slide rail.

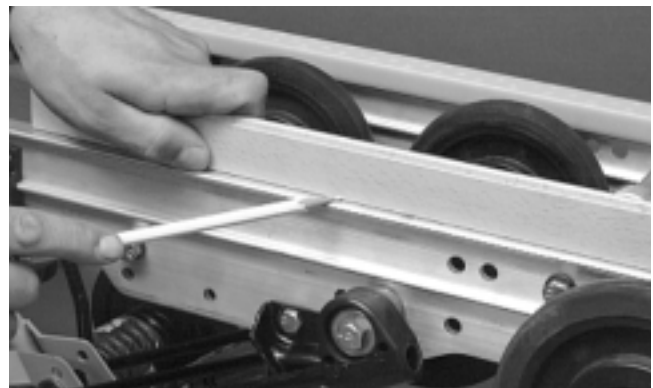
Fig. 9-64



AG529D

3. Using a straightedge, inspect the slide rail for any unusual bends. Place the straightedge along the bottom surface of the slide rail. If the rail is found to be bent, it must be replaced.

Fig. 9-65



AG536D

INSTALLING

■ **NOTE:** Apply a light coat of grease to the slide rail surface to aid in installing a new wear strip. If there are any sharp edges on the lower portion of the rail, use a file to remove them.

Fig. 9-66



AG534D

1. From the back, start the wear strip onto the rail; then using a block of wood and a hammer, drive the wear strip forward into position.

Fig. 9-67



AG535D

2. Secure with a machine screw and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

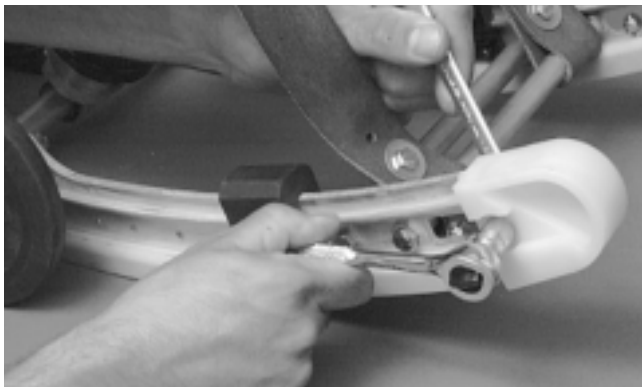
End Caps

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the lock nut, washers, and cap screw securing the end cap.

Fig. 9-68



AG506D

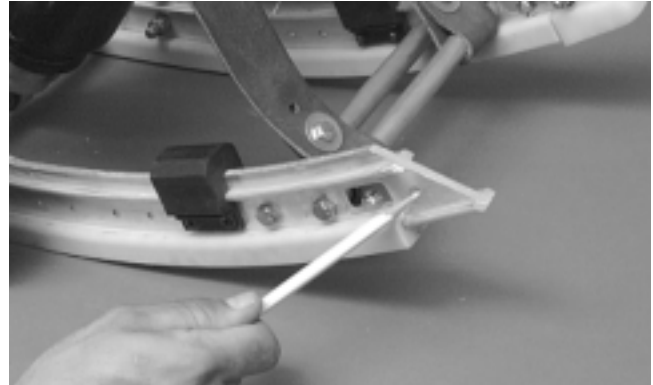
2. Using a hammer, tap the end cap off the rail.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the end cap area of the slide rail for cracks and wear.

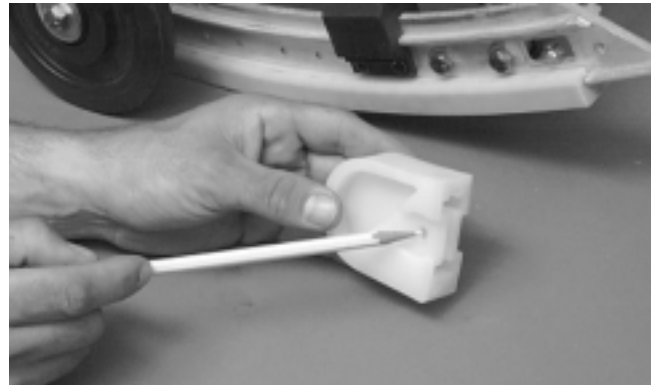
Fig. 9-69



AG507D

2. Inspect the end cap for any signs of cracking or wear.

Fig. 9-70



AG508D

3. Clean both the slide rail area and the end cap. Using compressed air, clean the areas of dirt and gravel.

WARNING

Always wear an approved pair of safety glasses when using compressed air.

4. Inspect the cap screw for cracked, stretched, or damaged threads. Use a new lock nut when assembling.

INSTALLING

1. Position the end cap on the slide rail; then align the hole in the end cap with the hole in the slide rail.
2. Secure with a cap screw, washers, and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

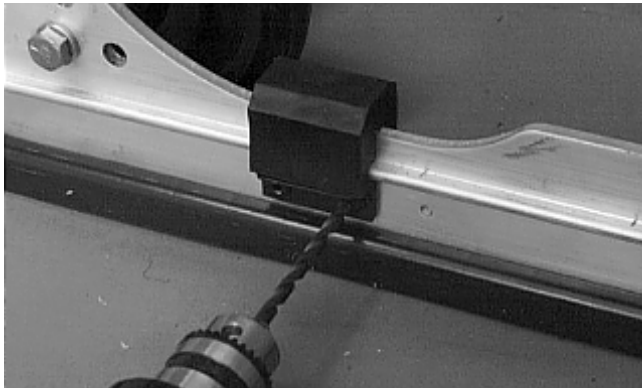
Shock Pads

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Using a 3/16-in. drill bit drill out the rivets securing the shock pad to the slide rail. Account for the retaining brackets.

Fig. 9-71



AG476D

2. Remove the shock pad.

INSPECTING

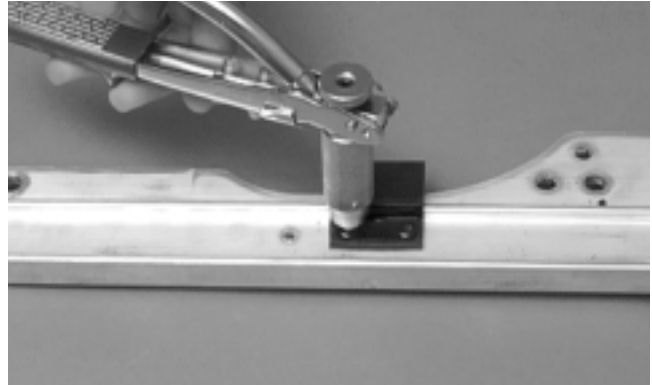
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the pad and retaining brackets for damage or wear.
2. Inspect the rivet holes in the slide rail for damage or elongation.

INSTALLING

1. Place the pad and retaining brackets into position on the slide rail.
2. Secure the pad assembly with rivets.

Fig. 9-72



AG531D

Front Outer Idler Wheels

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

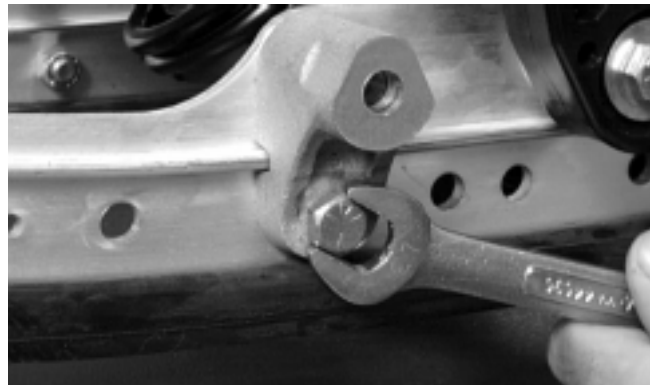
1. Remove the cap screws and lock nuts securing the front outer idler wheel and the idler wheel mounting block. Account for flat washers and an axle.

Fig. 9-73



AG678D

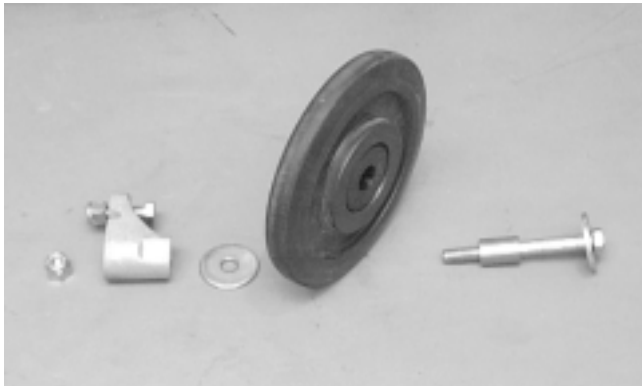
Fig. 9-74



AG686D

2. Note the locations of the flat washers for assembly purposes. The washers are to be installed next to the idler wheels.

Fig. 9-75



AG622D

CLEANING AND INSPECTING

NOTE: Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

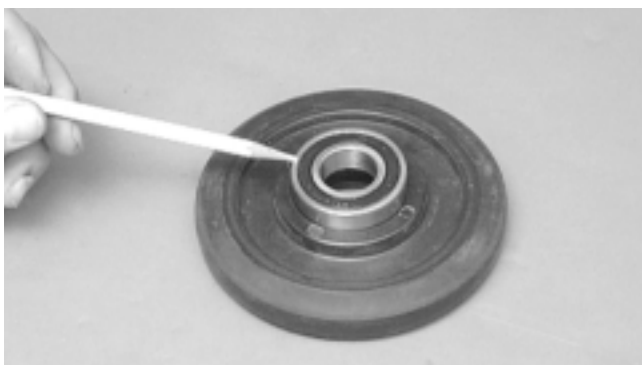
1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and each plastic hub for cracks or damage.
3. Rotate the idler wheel bearing (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.

CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-76



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

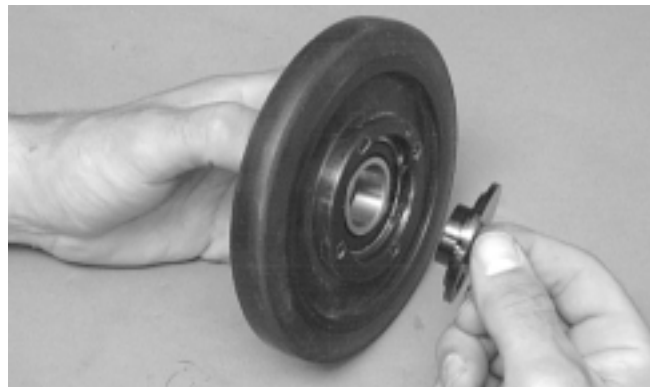
Fig. 9-77



AG539D

- E. Install the insert.

Fig. 9-78

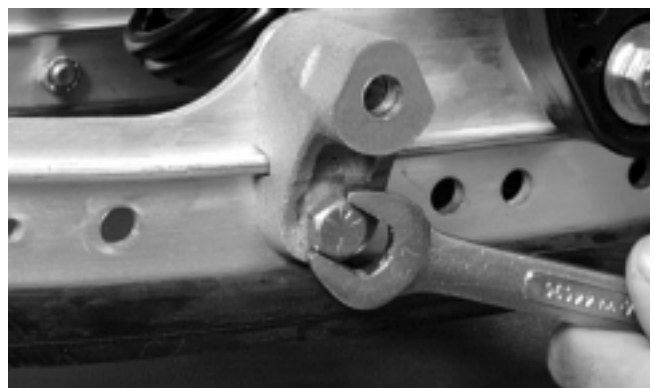


AG540D

INSTALLING

1. Secure the mounting block on the slide rail with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

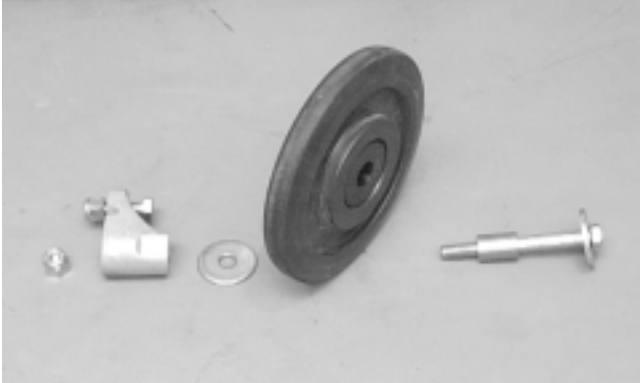
Fig. 9-79



AG686D

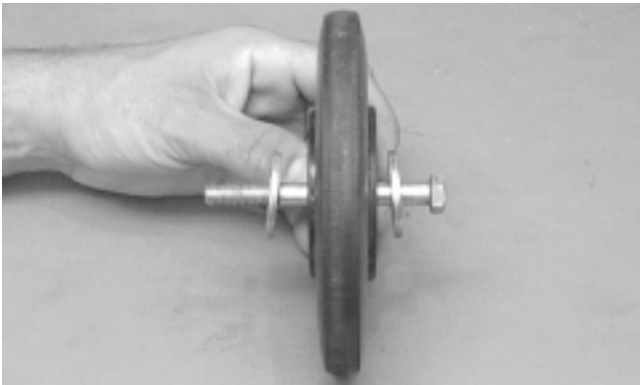
2. Place the idler wheel and axle against the mounting block making sure there is a flat washer on both sides of the idler wheel.

Fig. 9-80



AG622D

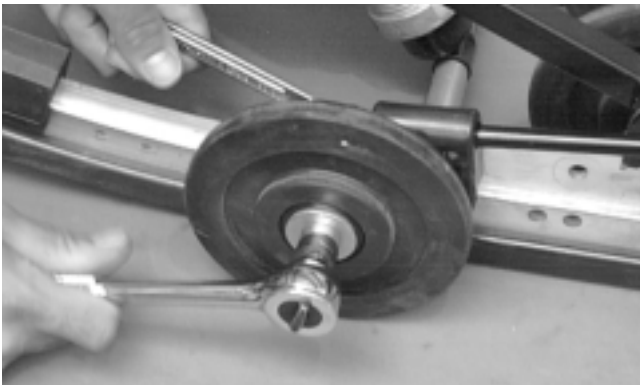
Fig. 9-81



AG623D

3. Secure the idler wheel assembly with a cap screw and a lock nut. Tighten cap screws to 3.2 kg-m (23 ft-lb).

Fig. 9-82



AG618D

Rear Inner Idler Wheels

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the cap screws and lock washers securing the idler wheel axle shaft to the slide rails.

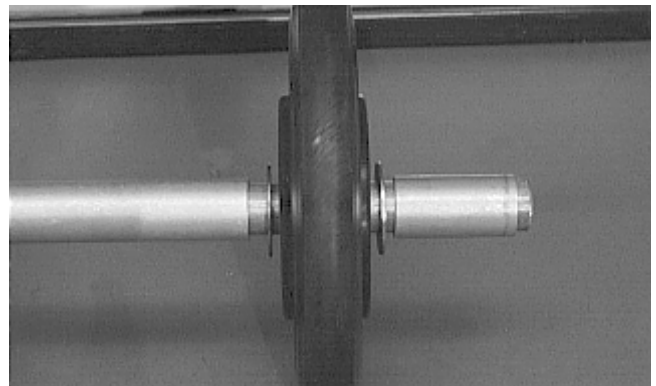
Fig. 9-83



AG592D

2. Slide the rear idler wheel assembly rearward and lift the idler wheel assembly from the suspension. Account for one long spacer, two short spacers, and four flat washers.

Fig. 9-84



AG459D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and plastic hub for cracks or damage.

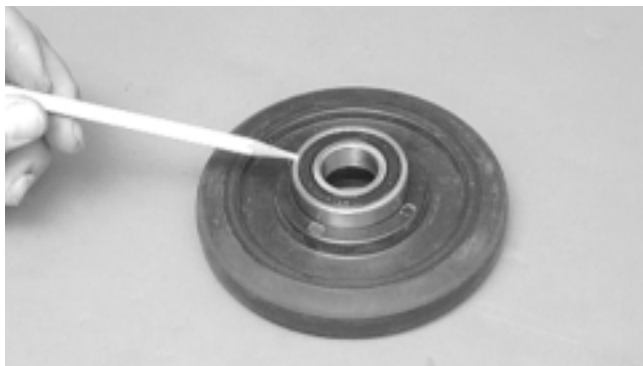
3. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.

⚠ CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-85



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

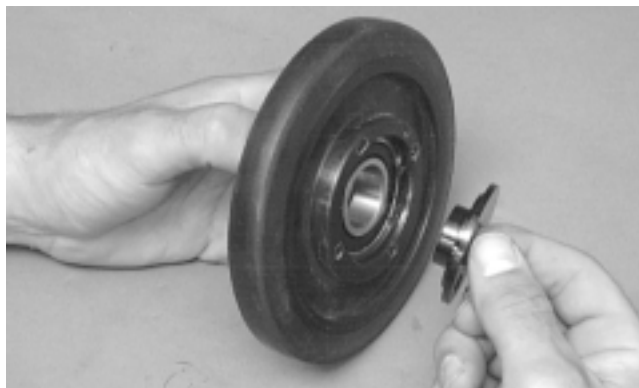
Fig. 9-86



AG539D

- E. Install the insert.

Fig. 9-87

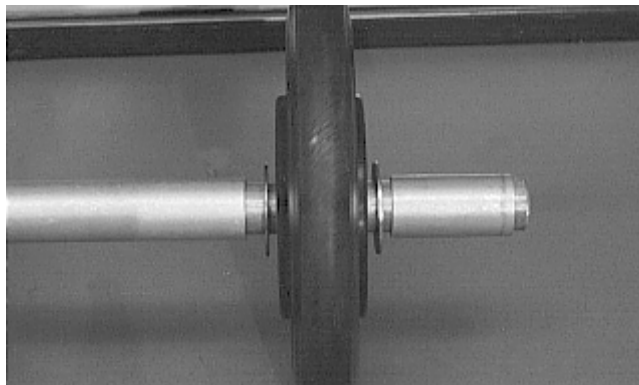


AG540D

INSTALLING

1. Position the idler wheels with spacer and spacer washers (one on each side of idler wheel) on the axle.

Fig. 9-88

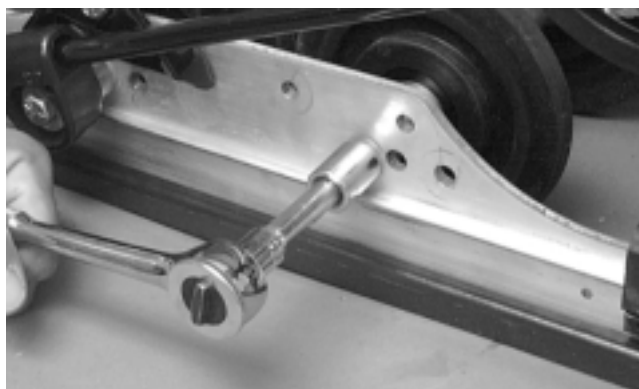


AG459D

2. Slide the inner wheel assembly into position between the rails. Secure the axle with two cap screws and lock washers (coated with red Loctite #271). Tighten to 3.2 kg-m (23 ft-lb).

NOTE: To prevent possible damage to the skid frame, make sure to install the idler wheels in their proper mounting locations.

Fig. 9-89



AG592D

Rear Upper Idler Wheels/Rear Springs

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

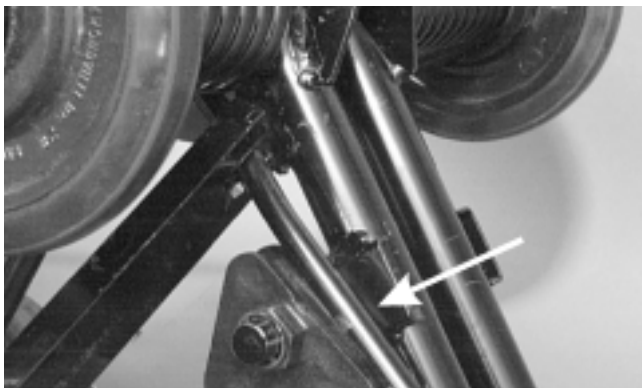
REMOVING

1. Using the Rear Suspension Spring Tool (p/n 0144-311), remove the spring from the adjusting cam.

⚠ WARNING

Care must be taken when removing the spring or damage or injury could result.

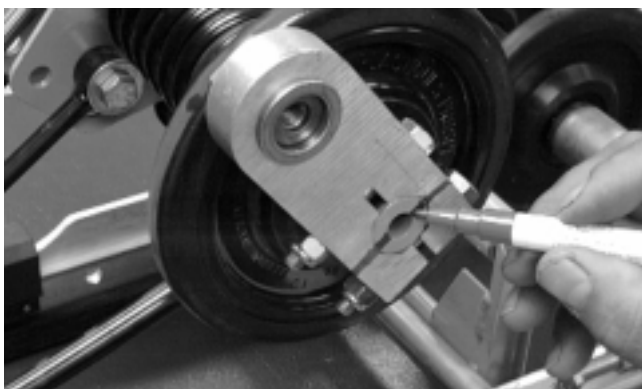
Fig. 9-90



AG624DA

2. Mark the offset pivot idler and the idler arm for assembly purposes.

Fig. 9-91



AG675D

3. Remove the cap screws securing the offset pivot idler arm assembly to the idler arm; then remove the offset pivot arm idler assembly. Account for a flanged axle, flared bushing, idler spacer collar, and lock nuts.

Fig. 9-92

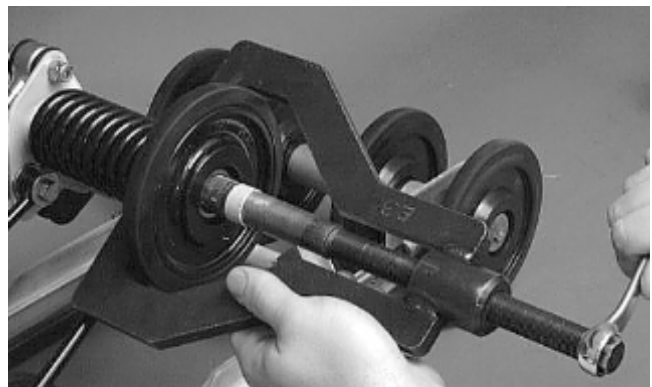


AG677D

4. Remove the idler wheel.

■ **NOTE:** It may be necessary to use the Idler Wheel Puller Kit (p/n 0644-122) to remove the wheel.

Fig. 9-93



AG461D

5. Remove the cap screw and flat washer securing the spring slide to the rail. Account for a slide block and washer.

Fig. 9-94



AG593D

6. Remove the spring and sleeve from the idler arm.

Fig. 9-95



AG681D

■ **NOTE:** Use the same procedure for the other side.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and plastic hub for cracks or damage.
3. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.

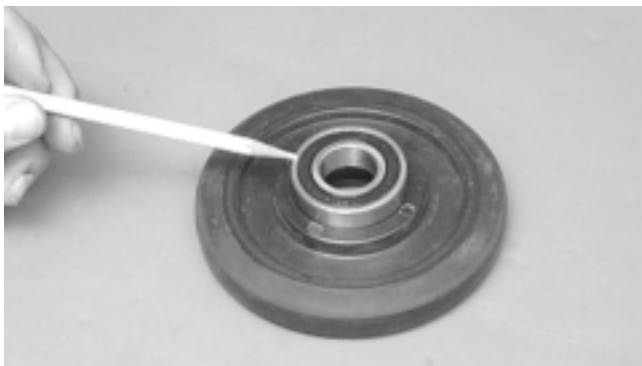


CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-96



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

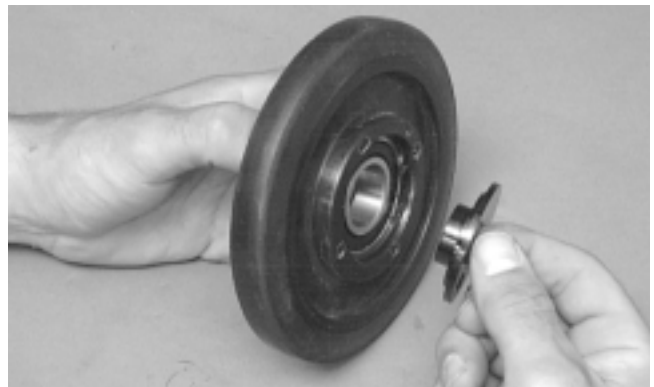
Fig. 9-97



AG539D

- E. Install the insert.

Fig. 9-98



AG540D

5. Inspect the spring, spring slide, sleeve, washers, slide block insert, and shaft area for wear.
6. Inspect the adjusting cams and arms for cracks.

INSTALLING

1. Slide the sleeve and spring onto the idler arm.

Fig. 9-99



AG655D

- Place the spring slide and slide block (with spring in slide block) into position on the slide rail. Secure with a cap screw (coated with red Loctite #271) and washer. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-100



AG680D

Fig. 9-101



AG593D

- Install the rear upper idler wheel on the idler arm.

Fig. 9-102



AG545D

- Install the idler spacer collar onto the idler arm.

Fig. 9-103



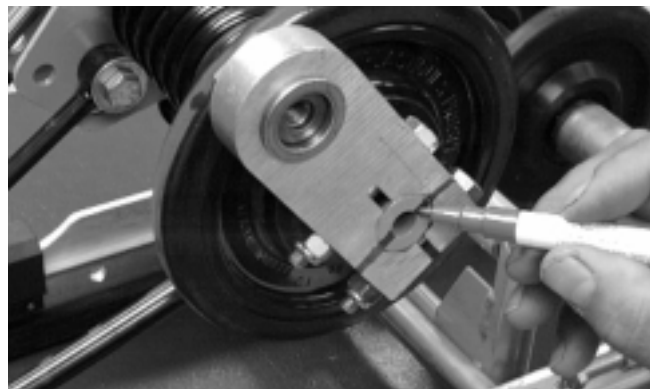
AG677D

- Place the flanged axle with a thin flat washer through the notched side of the offset pivot idler arm assembly.

NOTE: If the flanged axle in the offset pivot idler arm is loose, it must be cleaned and green Loctite #609 must be applied to it prior to installation.

- Align the marks on the idler arm to the centerline of the offset pivot idler arm assembly. Secure the offset pivot idler arm to the idler arm with cap screws and lock nuts. Tighten to 2.6 kg-m (19 ft-lb).

Fig. 9-104



AG675D

- Place the short spring leg onto the adjusting cam using the rear suspension spring tool.

Fig. 9-105



AG624DA

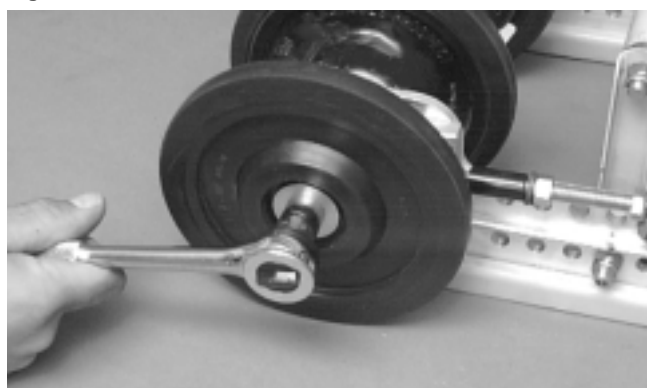
Rear Axle and Idler Wheels

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Remove the cap screw and large flat washer securing the outer rear idler wheel. Remove the outer idler wheel from the shaft.

Fig. 9-106



AG548D

■ **NOTE:** The large flat side of the wheel insert is positioned next to the inner plastic adjuster bushing. The idler wheel must be installed with the wheel insert properly positioned.

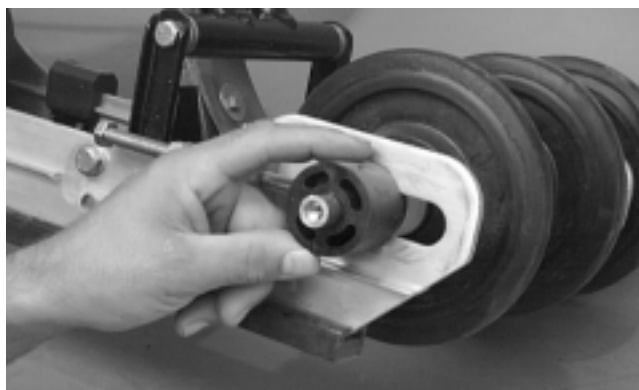
2. Loosen the track adjusting bolts. Slide the outer adjuster bushings off the axle.

Fig. 9-107



AG627D

Fig. 9-108



AG628D

3. Carefully slide the shaft out from the inner idler wheels and note the position of the spacers and washers.

Fig. 9-109



AG805D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

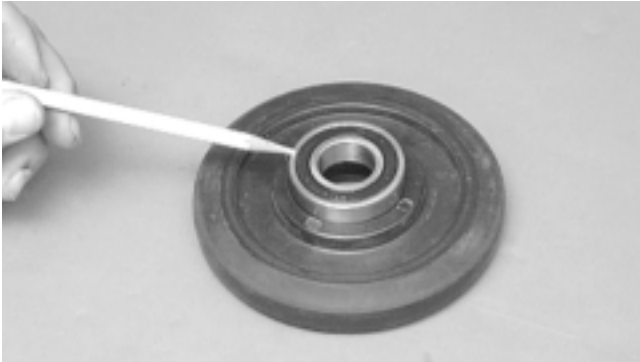
1. Clean the bearings with a clean cloth.
2. Inspect all idler wheel inserts (inner and outer) for any cracks.
3. Inspect the outer rubber portion of the idler wheels for cracks and poor bonding.
4. Inspect the plastic insert of each idler wheel for cracks.
5. Inspect the shaft for wear and damaged threads.
6. Inspect all idler wheel bearings. Turn each bearing (by hand) and if any roughness or binding is noted, replace the bearing.
7. If a bearing must be replaced, use this procedure.

CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-110



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

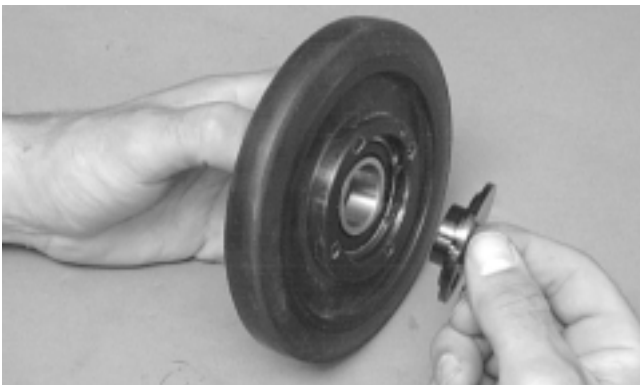
Fig. 9-111



AG539D

- E. Install the insert.

Fig. 9-112



AG540D

ASSEMBLING

1. In order from the right-hand side, slide the axle through the slide rail axle bracket; then place a flat washer, short spacer with bushings, inner idler wheel with insert, long spacer with bushings, and flat washer on the axle. Slide the axle through the opposite slide rail axle bracket. Place the plastic adjuster bushings on the axle (on the outside of each axle bracket). Make sure the hole in the adjuster bushing is aligned directly with the adjusting bolt.

Fig. 9-113



AG805D

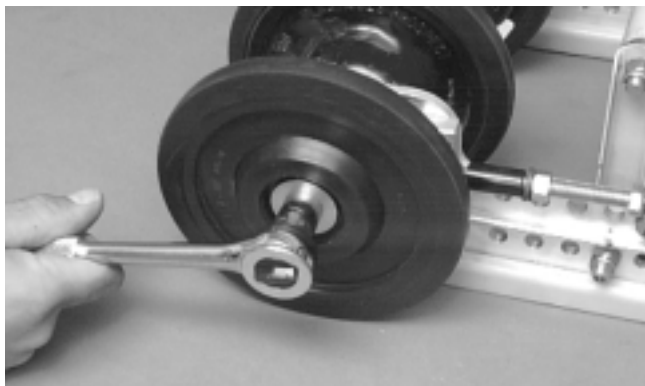
Fig. 9-114



AG551D

2. Place the outer idler wheels on the axle (with the large flat of the insert directed inward) and secure with two cap screws (coated with red Loctite #271) and large flat washers. Tighten cap screws to 3.2 kg-m (23 ft-lb).

Fig. 9-115



AG548D

3. Adjust track alignment (see Track Alignment in this sub-section).
4. Adjust track tension deflection (see Track Tension in this sub-section).

Idler Arm

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Remove the rear upper idler wheels and springs (see Rear Upper Idler Wheels/Rear Springs in this section).

Fig. 9-116



AG545D

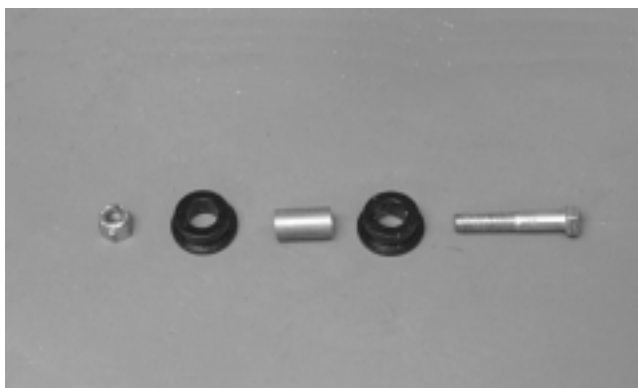
2. Remove the cap screw and lock nut securing the upper shock eyelet to the idler arm. Account for a spacer, lock nut, and bushings.

Fig. 9-117



AG467D

Fig. 9-118



AG553D

■ **NOTE:** Mark the hole that the upper shock links are mounted in for assembly purposes.

Fig. 9-119



AG554D

3. Remove the cap screw and lock nut securing the upper shock links to the idler arm. Account for a lock nut, spacer, flat washers, and axle links.

Fig. 9-120



AG682D

Fig. 9-123



AG558D

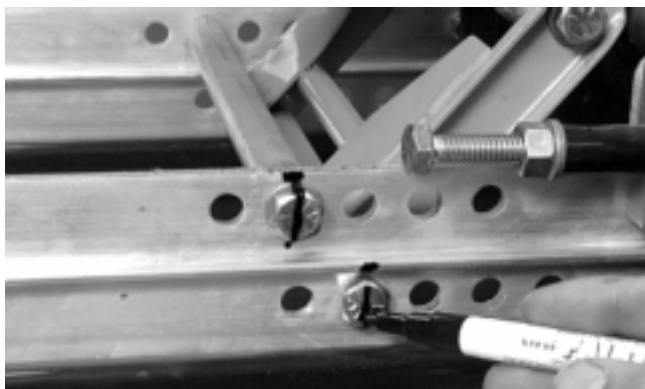
Fig. 9-121



AG556D

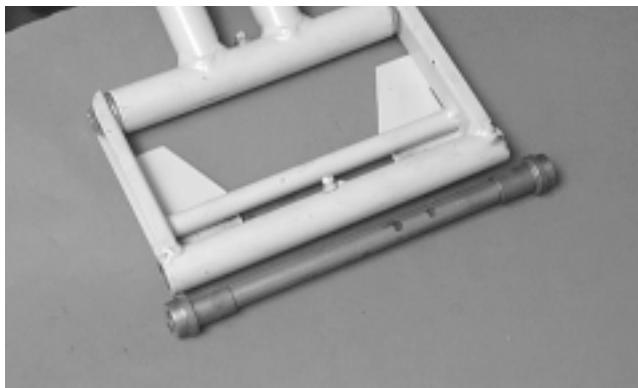
■ **NOTE:** Note the mounting hole from which the rear arm was removed for assembly purposes.

Fig. 9-122



AG683D

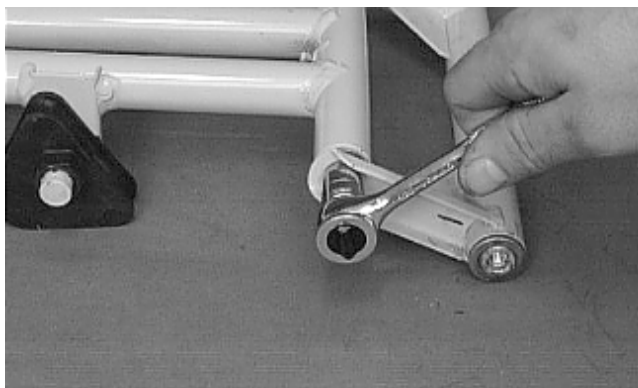
Fig. 9-124



AG560D

5. Remove the cap screw and lock nut securing the rear arm to the idler arm. Account for the aluminum axle and bushing assemblies.

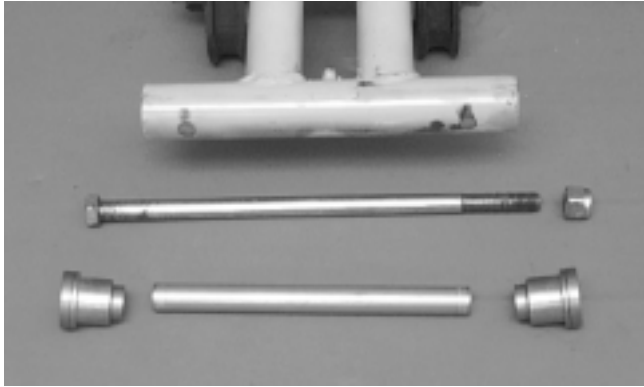
Fig. 9-125



AG477D

4. Remove the cap screw and lock nut securing the rear arm to the slide rail. Account for the serrated axles and axle tube.

Fig. 9-126



AG561D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearings with a clean cloth.
2. Inspect each idler wheel for cracks or damage.
3. Inspect the bushings (located in the arm pivot area) for wear or damage.
4. Inspect all welds and the tubing of the upper arm for cracks or unusual bends.
5. Inspect the two adjusting cams for damage.
6. Rotate the idler wheel bearings (by hand) and check for binding or roughness.
7. If a bearing must be replaced, use this procedure.

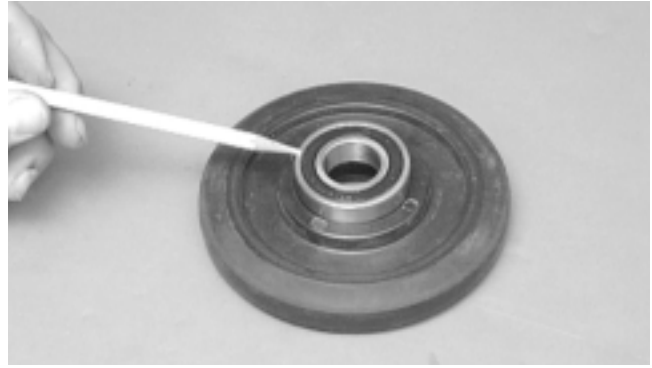


CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-127



AG538D

- D. Install the snap ring making sure the "sharp side" is directed away from the bearing.

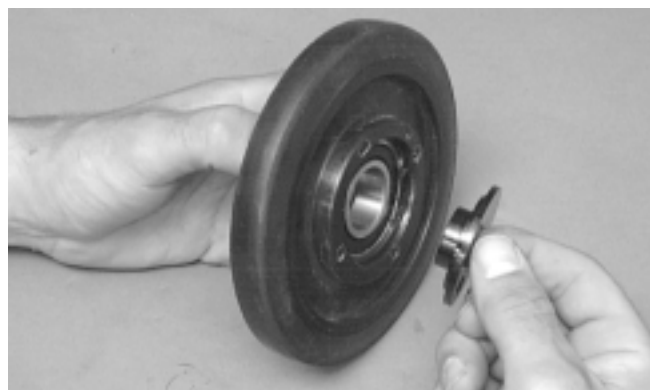
Fig. 9-128



AG539D

- E. Install the insert.

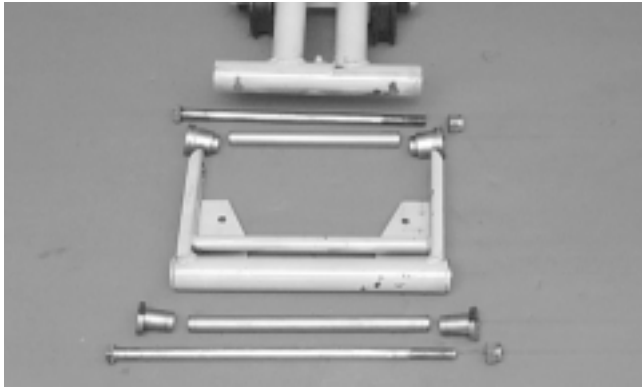
Fig. 9-129



AG540D

ASSEMBLING

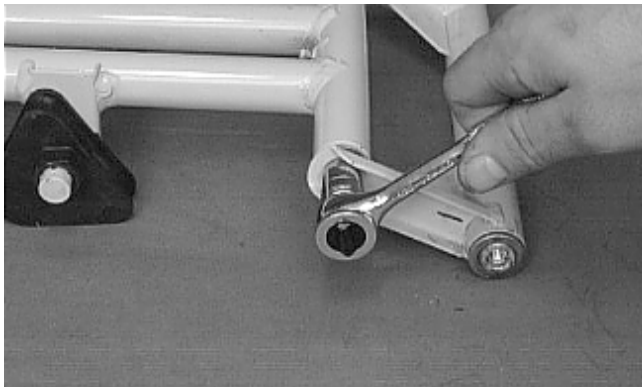
Fig. 9-130



AG562D

1. Install the rear arm onto the idler arm with an aluminum axle, bushing assemblies, cap screw, and a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-131



AG477D

■ **NOTE:** Install the rear arm assembly into the appropriate mounting hole as noted during disassembly.

2. Place the rear arm assembly into position (with the brace facing towards the front side) between the slide rails. Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-132



AG558D

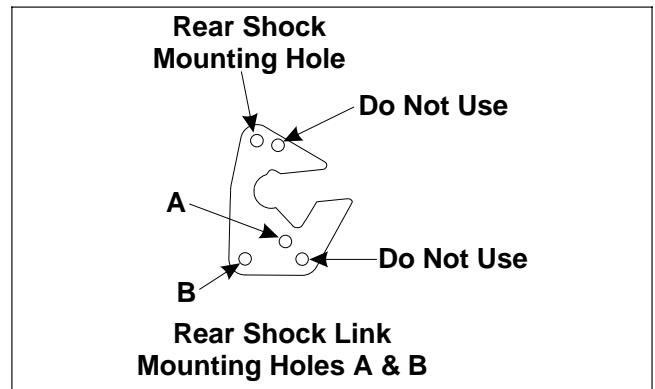
3. Position the shock links in the appropriate holes of the idler arm brackets (see 2000 Suspension Mounting Location Chart in this section). Place a spacer between the center of the brackets; then place a flat washer on the cap screw. Insert the axle links into the upper shock link eyelets; then insert the cap screw with washer through the eyelets. Secure with a cap screw, washer, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-133



AG556D

Fig. 9-134



732-688F

Fig. 9-135



AG682D

4. Place the upper shock eyelet with bushings between the idler arm brackets making sure the spacer is properly positioned between the brackets. Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-136



AG467D

■ **NOTE:** Do not over-tighten the shock absorber cap screw as the shock eyelet must be free to pivot.

5. Grease the idler arm and rear arm grease fittings with a low-temperature grease.
6. Install the rear upper idler wheels, rear springs, and offset pivot idler (see Rear Upper Idler Wheels/Rear Springs in this sub-section).

Front Arm/Front Shock Absorber/Front Inner Idler Wheels

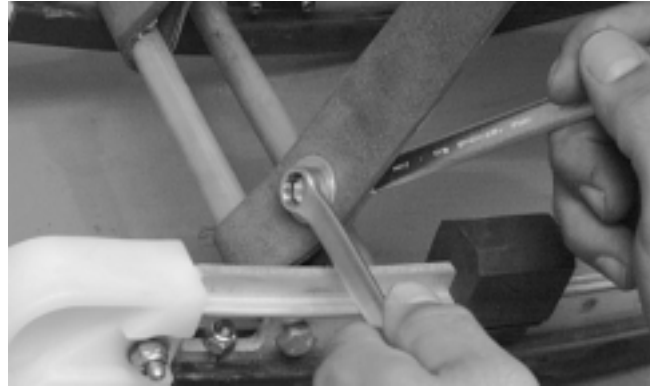
■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section), and the rear springs must be removed from the adjusting cams.

REMOVING

■ **NOTE:** On models with remote adjuster, cut the cable ties securing the front shock absorber hose to the front arm.

1. Remove the lower cap screws and lock nuts securing the limiter straps to the rail support. Account for flat washers.

Fig. 9-137



AG632D

2. Remove the cap screw and lock nut securing the upper front shock absorber eyelet to the front arm. Pull the shock eyelet free of the bracket. Account for a serrated axle.

Fig. 9-138



AG582D

3. Remove the cap screws and lock nuts securing the front arm to the front arm mounting brackets.

Fig. 9-139



AG565D

4. Remove the front arm and account for the two front arm spacers.

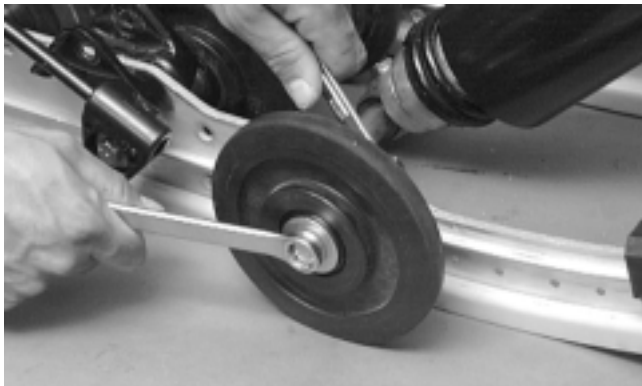
Fig. 9-140



AG485D

5. Remove the cap screws securing the front outer idler wheels to the idler wheel mounting block. Account for a lock nuts, axles, inserts, and flat washers.

Fig. 9-141



AG566D

6. Remove the cap screw and lock washer securing one side of the shock mount axle. Clean the Loctite from the axle threads and cap screw threads; then reinstall the cap screw. Remove the opposite-side cap screw and lock washer; then clean the Loctite from the axle threads and cap screw threads. Remove the first cap screw and washer; then remove the axle and account for spacers, flat washers, and shock bushings. Discard the cap screws.

CAUTION

It may be necessary to heat the cap screws. Care must be taken to prevent damage to other components.

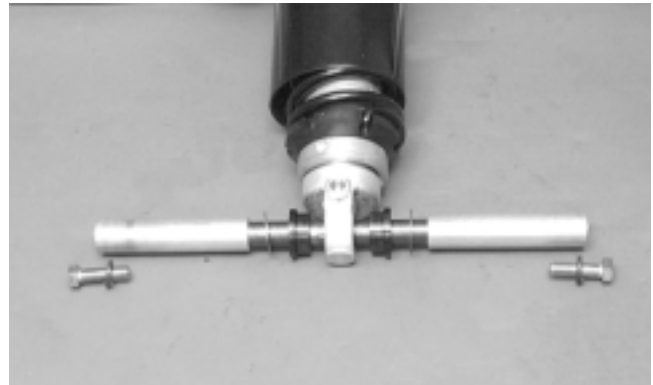
■ **NOTE:** New cap screws must be used when installing the shock mount axle.

Fig. 9-142



AG567D

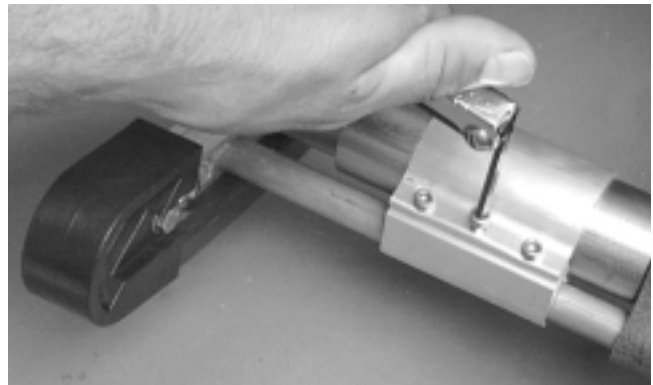
Fig. 9-143



AG568D

■ **NOTE:** On models with remote adjuster, loosen the three Allen-head screws securing the remote reservoir; then slide the reservoir assembly over and remove the reservoir with hoses.

Fig. 9-144



AG591D

CAUTION

Care must be taken when removing the remote reservoir that the hoses are not kinked or damaged.

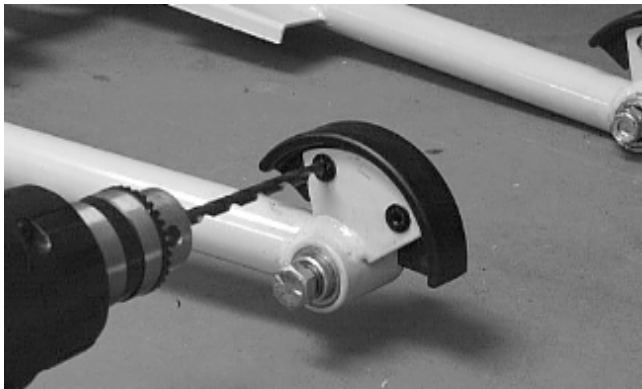
7. Using a plastic mallet, tap the axle from the lower shock eyelet.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect all front arm weldments for cracks or unusual bends.
2. Closely inspect all tubing for cracks or unusual bends.
3. Inspect the bearings, bushings, and front arm spacers for wear or damage.
4. Inspect the two rear track guide bumpers. If worn, drill out the rivets securing the bumpers to the arm and replace with new bumpers.

Fig. 9-145



AG486D

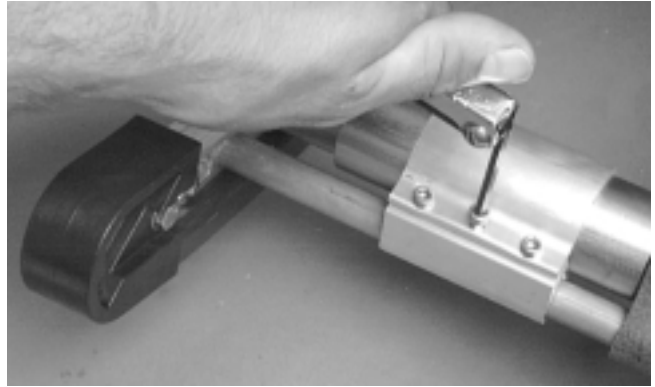
5. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enters the shock body.
6. Inspect the shock absorber eyelet welds (at each end) for any cracks, signs of separation, or for unthreading.
7. Inspect the shock absorber and reservoir hoses (on models with remote adjuster) for damage.

INSTALLING

1. On models with remote adjuster, place the remote reservoir into position making sure the hose is directed to the left-side of the skid frame. Secure with the three Allen-head screws coated with red Loctite #271. Tighten the outside screws first.

■ **NOTE:** The center Allen-head screw will not bottom on its shoulder when tightened. It bottoms on the cross-shaft to hold the assembly centered.

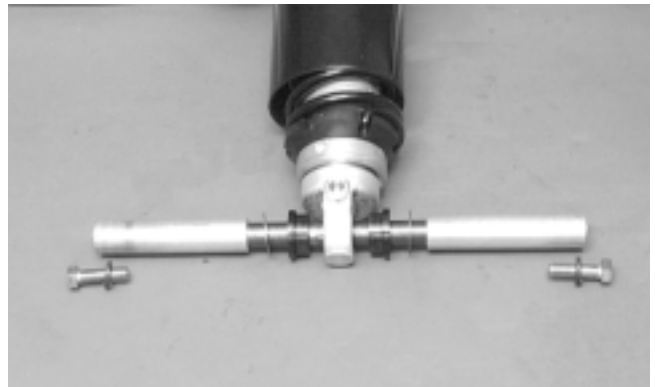
Fig. 9-146



AG591D

2. Install the axle into the lower shock eyelet bushing assembly. Apply grease to the axle; then install the spacers.

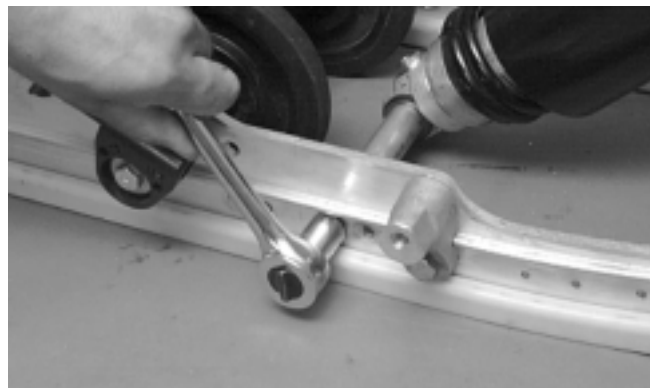
Fig. 9-147



AG568D

3. Place the shock mount axle into position on the skid frame making sure the spacers and washers are properly positioned. Secure with new cap screws (coated with green Loctite #609) and washers. Tighten to 4.2 kg-m (30 ft-lb).

Fig. 9-148



AG567D

4. Position the front arm with spacers into the mounting brackets. Secure with cap screws and lock nuts. Tighten to 4.2 kg-m (30 ft-lb).

Fig. 9-149



AG565D

5. Secure the upper shock eyelet and serrated axle in the appropriate mounting hole of the front arm (standard arm mounting position). Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-150



AG564D

6. Secure the limiter straps with cap screws, washers, and lock nuts. Tighten to 1.1 kg-m (8 ft-lb).

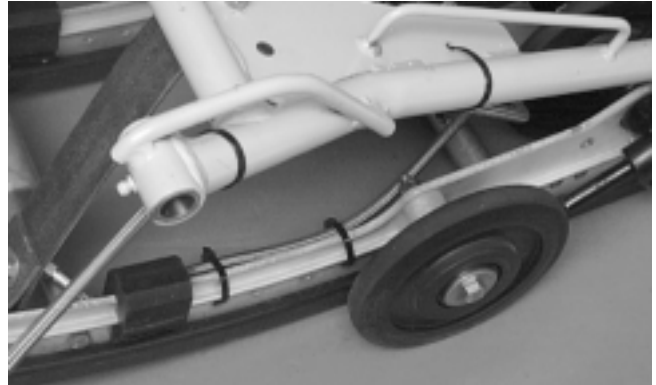
Fig. 9-151



AG480D

■ **NOTE:** On models with remote adjuster, secure the shock absorber hose to the left upper arm and slide rail using cable ties. Pull the cable ties tight to prevent the hose from sliding. Compress the front arm to assure the hose does not interfere with the suspension.

Fig. 9-152



AG590D

7. Secure the front outer idler wheels to the idler wheel mounting blocks with cap screws, flat washers, inserts, axles, and lock nuts. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-153



AG572D

Fig. 9-154



AG512D

Rear Shock Absorber and Shock Links

■ **NOTE:** Before removing the skid frame by using the Rear Suspension Spring Tool (p/n 0144-311), remove the spring from the adjusting cam.

CAUTION

Care must be taken when removing the spring from the adjusting cam or damage or injury could result.

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Remove the rear inner idler wheels (see Rear Inner Idler Wheels in this sub-section).

Fig. 9-155



AG592D

2. Note the hole location that the spring slides are in; then remove the cap screws and flat washers securing the spring slides to the rails. Account for slide blocks.

Fig. 9-156



AG662D

3. Tap the idler wheel assembly rearward until it clears the mounting brackets; then lift the idler wheel assembly upward until the shaft clears the rails.

Fig. 9-157



AG569D

■ **NOTE:** Lay components out in order as they are removed.

4. Remove the spacer, washer, idler wheel with inserts, washer, and inner bushing. Repeat the same procedure on the other side of the shock pivot bracket. Remove the idler wheel axle.

Fig. 9-158



AG492D

Fig. 9-159



AG663D

5. Disengage the shock absorber at the lower eyelet. Account for washers, axle links, bushings, shock sleeve, cap screw, and a lock nut.

Fig. 9-160

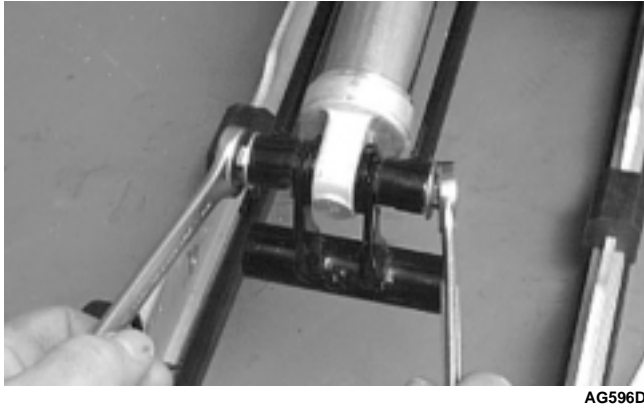
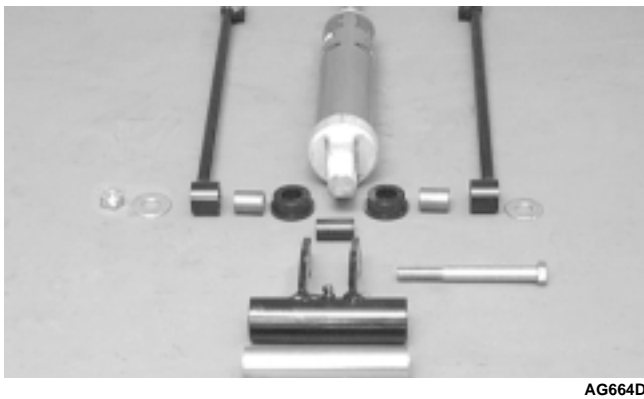


Fig. 9-161

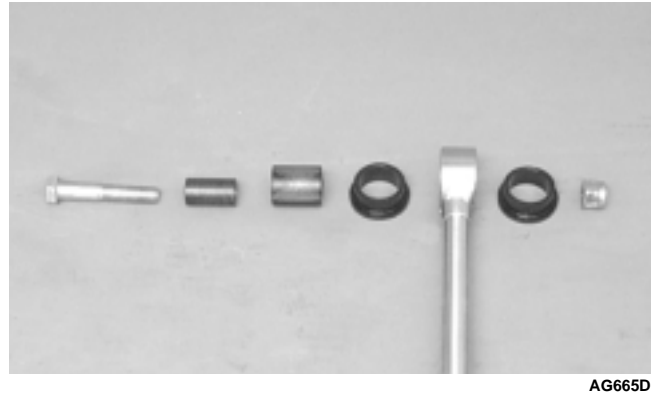


6. Disengage the shock absorber at the upper eyelet and remove the shock absorber. Account for a sleeve, cap screw, lock nut, and bushings.

Fig. 9-162



Fig. 9-163



CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean shock pivot and idler wheel axle in part-cleaning solvent. Dry with compressed air.

WARNING

Always wear an approved pair of safety glasses when using compressed air.

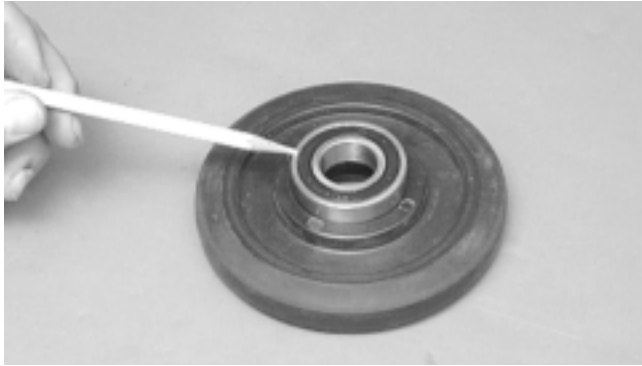
2. Clean the idler wheel bearings with a clean cloth.
3. Closely inspect the torque link arm and axles for wear, bends, or damaged splines at either end.
4. Inspect the idler wheels for signs of cracking, wear, or outer rubber separation from plastic wheel.
5. Rotate the idler wheel bearings (by hand) and inspect for any signs of binding or roughness.
6. If a bearing must be replaced, use this procedure.

CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-164



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

Fig. 9-165



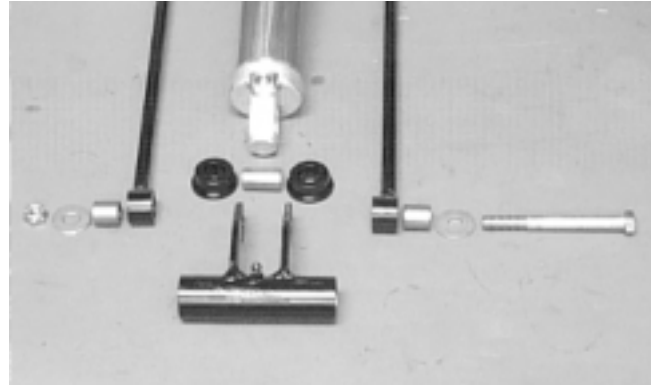
AG539D

7. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enters the shock body.
8. Inspect the rubber shock bushings located in the shock absorber eyelets for cracks or deterioration.
9. Inspect the shock absorber eyelet welds (at each end) for any cracks or signs of separation.
10. Inspect the welds securing the eyelets of the shock links for cracks or signs of separation. Either weld the eyelet or replace the shock link.
11. Inspect the axle surfaces for any signs of corrosion. If corrosion is found, lightly buff the surface of the axle with #400 wet-or-dry sandpaper; then apply a light coat of grease.

ASSEMBLING

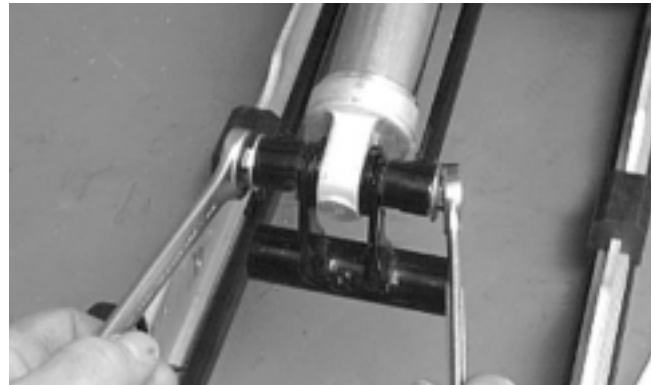
1. Secure the rear shock links and the lower shock absorber eyelet to the shock pivot bracket. Place the bushings and shock sleeve into the shock eyelet; then install the axle links into the rear shock links. Secure the assembly by installing a cap screw and flat washer through the shock link assembly, shock pivot bracket and shock eyelet assembly, shock link assembly, and a flat washer. Secure the assembly with a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-166



AG595D

Fig. 9-167



AG596D

2. Secure the shock absorber to the idler arm with bushings, sleeve, lock nut, and a cap screw. Tighten to 3.2 kg-m (23 ft-lb).

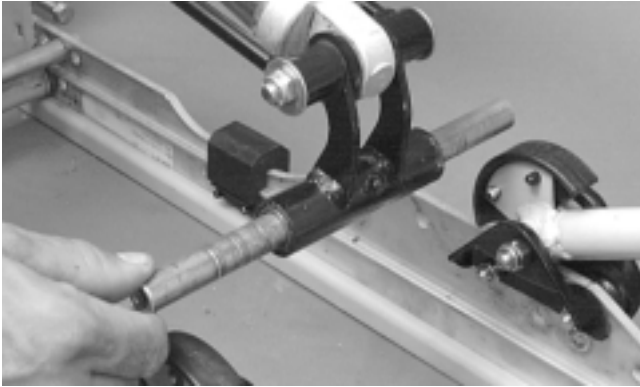
Fig. 9-168



AG657D

3. Apply a thin coat of low-temperature grease to the bushing and idler wheel axle and slide the bushing and axle into the shock pivot bracket. Have equal amounts of the axle exposed on either side of the bracket tube.

Fig. 9-169



AG597D

- Slide a washer onto the axle; then install an idler wheel (with its larger bearing insert side facing the shock pivot), washer, and spacer. Repeat the same procedure on the other side of the shock pivot bracket.

Fig. 9-170



AG492D

- Lower the idler wheel assembly down between the rails. Align the axle with the mounting hole just below the front arm mounting brackets (as noted during disassembly). Secure the spring slides (with spring legs in position), slide blocks, and front inner idler wheel axle assembly to the rails. Tighten to 3.2 kg-m (23 ft-lb).

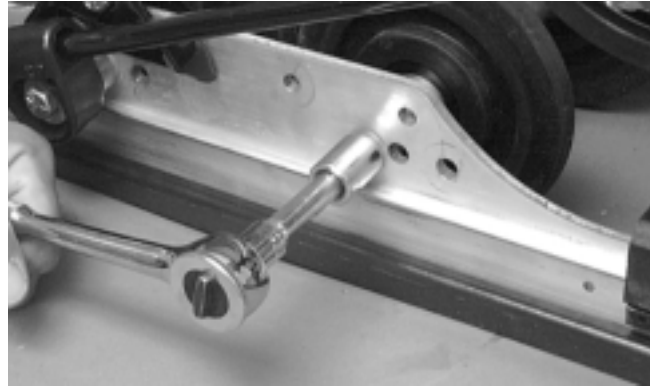
Fig. 9-171



AG662D

- Secure the rear inner idler wheel axle assembly (see Rear Inner Idler Wheels in this sub-section).

Fig. 9-172



AG592D

Slide Rails

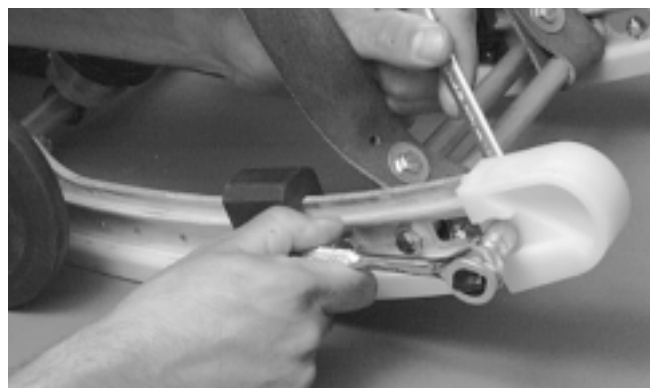
■ **NOTE:** The skid frame must be removed for this procedure.

REMOVING

■ **NOTE:** When it is necessary to replace one or both slide rails, it is recommended that one slide rail be removed at a time. The remaining slide rail will then hold the crossbraces, axles, and brackets in their correct assembly order. Always mark the mounting hole locations during disassembly to speed up the assembly process and to prevent any damage. This method is much quicker than to completely disassemble the entire skid frame. To replace either rail, use the following procedure.

- Remove the end cap from the slide rail. Account for a cap screw, lock nut, and two flat washers.

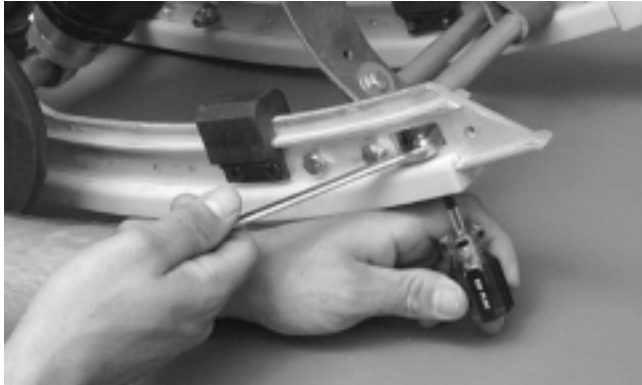
Fig. 9-173



AG506D

- Remove the machine screw and lock nut securing the wear strip to the front of the slide rail.

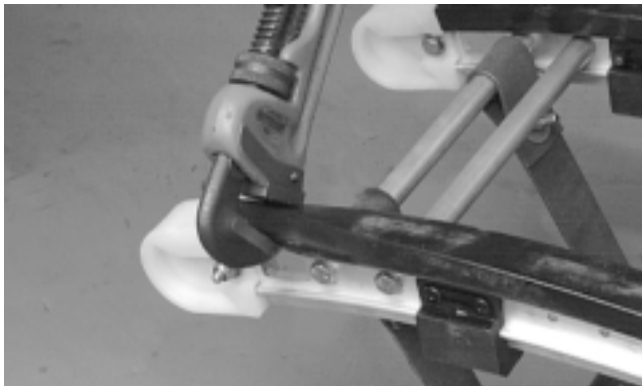
Fig. 9-174



AG509D

3. Using a pipe wrench and starting from either end, hook the edge of the wear strip with the pipe wrench jaw and twist the wear strip off the slide rail. Move the pipe wrench 7.5 cm (3 in.) and again twist the wear strip off the rail. Repeat this procedure until the wear strip is free of the rail.

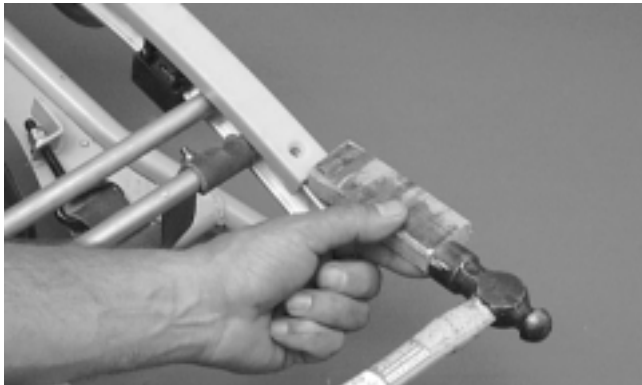
Fig. 9-175



AG617D

■ **NOTE:** The wear strip can also be driven off the slide rail; however, it is quicker to use the pipe wrench.

Fig. 9-176

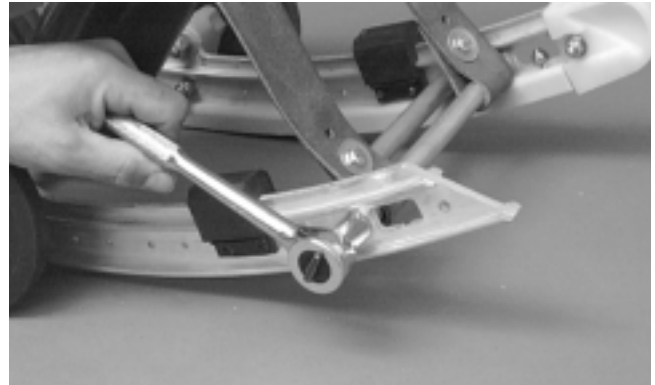


AG510D

4. Remove the cap screws securing the crossbraces to the slide rail.

■ **NOTE:** On models with remote adjuster, cut the cable ties securing the hose to the slide rail and arm.

Fig. 9-177



AG511D

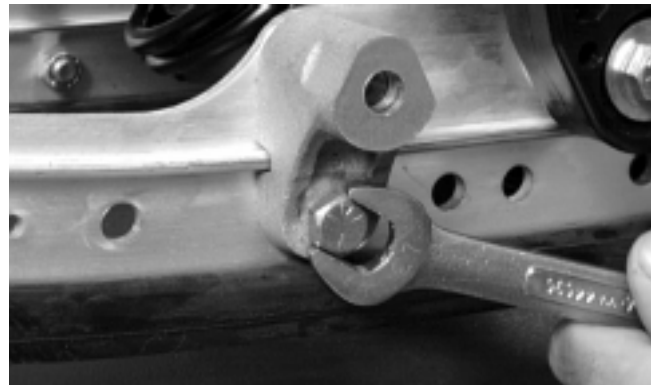
5. Remove the cap screws and lock nuts securing the front outer idler wheel and the idler wheel mounting block. Account for flat washers and an axle.

Fig. 9-178



AG512D

Fig. 9-179



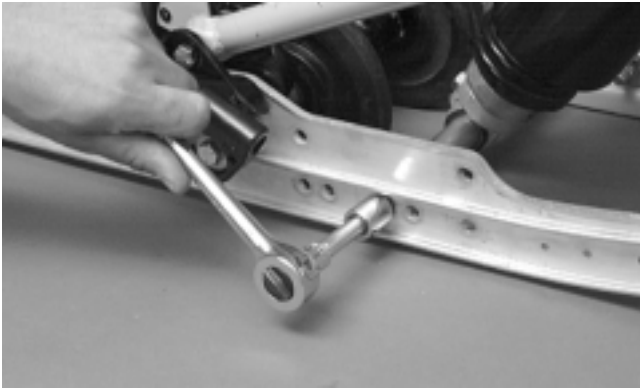
AG686D

6. Remove the cap screws and lock washers securing the front shock mount axle. Discard the cap screws.

CAUTION

It may be necessary to heat the cap screws.

Fig. 9-180



AG514D

7. Remove the short spring leg from the adjusting cam.

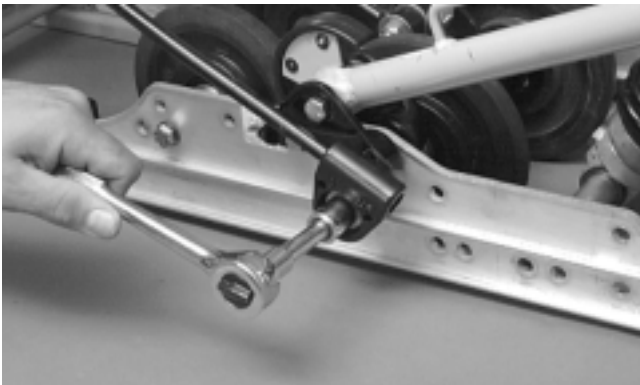
Fig. 9-181



AG624DA

8. Remove the cap screw and flat washer securing the spring slide to the rail. Account for a spacer and the slide block.

Fig. 9-182



AG515D

Fig. 9-183



AG680D

9. Mark the mounting position of the front arm mounting bracket.

Fig. 9-184



AG637D

10. Remove the cap screws securing the front arm mounting bracket. Account for lock nuts.

Fig. 9-185



AG638D

11. Mark the mounting position of the rear inner idler wheels.

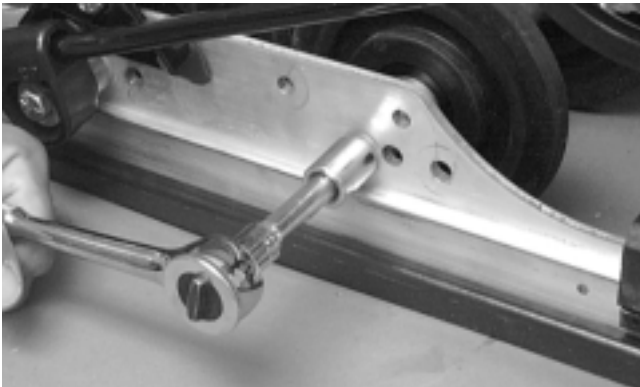
Fig. 9-186



AG668D

12. Remove the cap screws and lock nut securing the rear inner idler wheels.

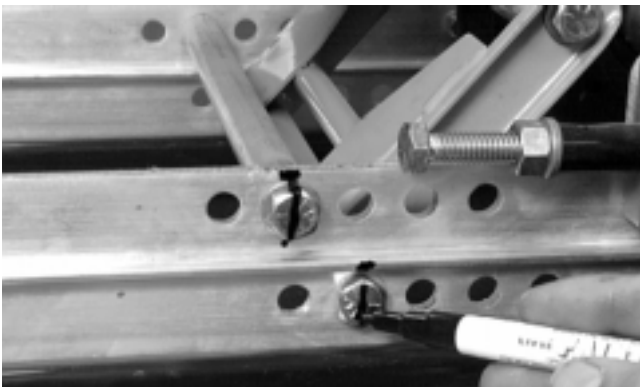
Fig. 9-187



AG592D

13. Mark the mounting position of the rear arm limiter and rear arm.

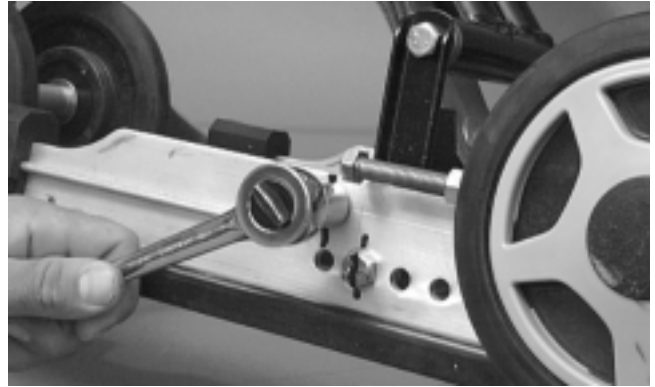
Fig. 9-188



AG683D

14. Remove the cap screw, lock washer, and lock nut from the rear arm limiter shaft.

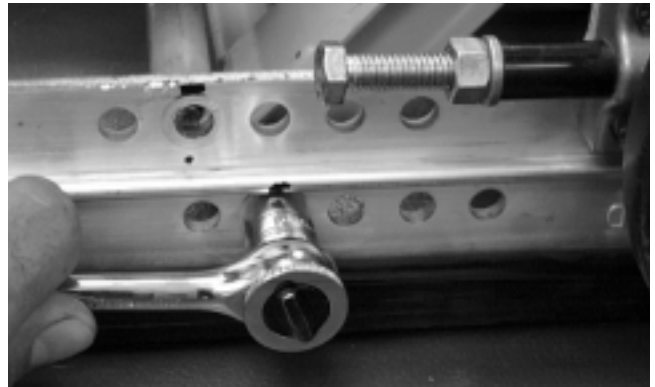
Fig. 9-189



AG639D

15. Remove the cap screw and lock nut securing the rear arm to the rail.

Fig. 9-190



AG694D

16. Remove the idler wheel insert; then remove the cap screw and flat washer securing the rear idler wheel. Remove the idler wheel; then remove the adjuster bushing.

Fig. 9-191



AG626D

Fig. 9-192



AG551D

■ **NOTE:** The adjusting bolt may have to be loosened to remove the adjuster bushing.

Fig. 9-193

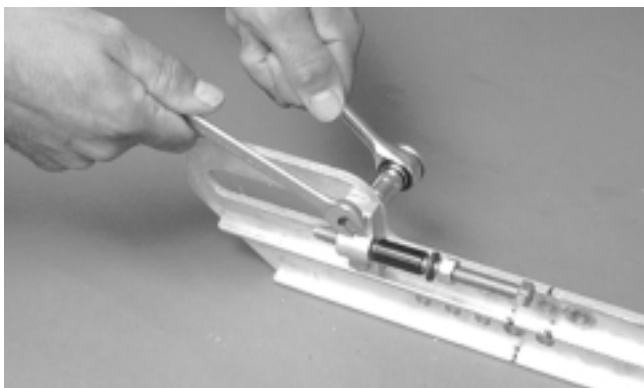


AG627D

■ **NOTE:** At this point, the slide rail should be free of the skid frame components and can be removed.

17. Remove the cap screws and lock nuts securing the track adjuster bracket.

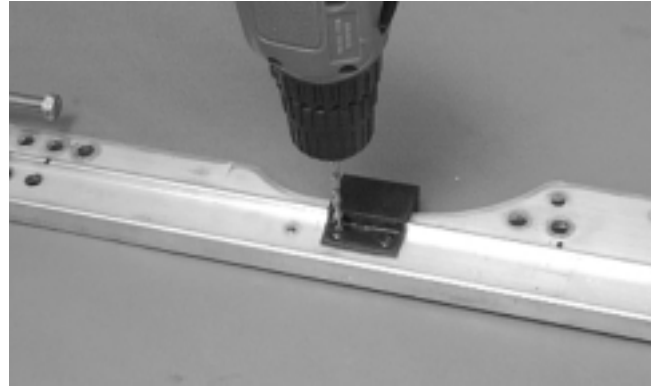
Fig. 9-194



AG527D

18. Using a drill and a 3/16-in. drill bit, drill out the rivets and remove the shock pads. Note the shock pad location for installation. Account for the retaining brackets.

Fig. 9-195



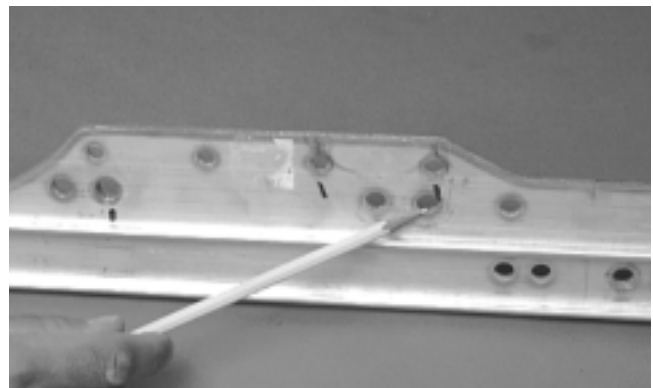
AG528D

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the slide rail for cracks or unusual bends.

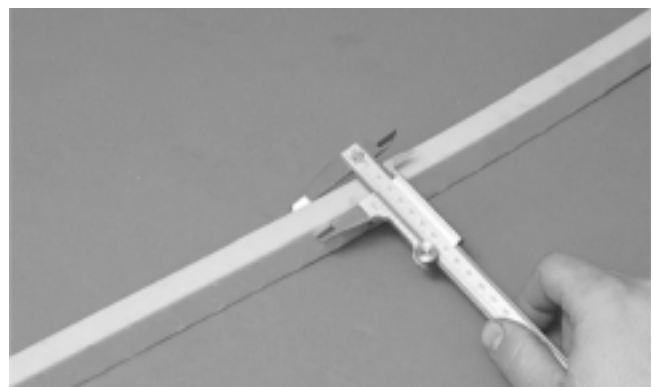
Fig. 9-196



AG529D

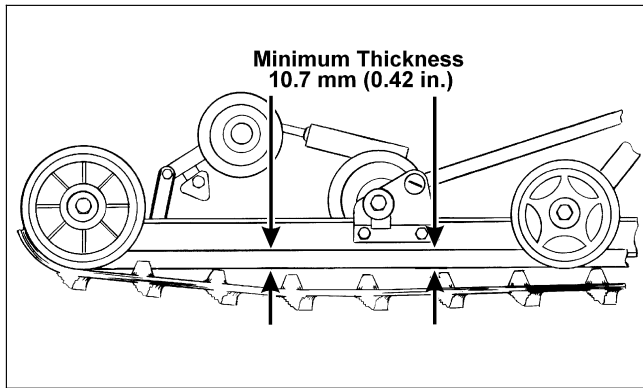
2. Inspect the wear strip for wear. The wear strip must be 10.7 mm (0.42 in.) thick or thicker. If the wear strip measurement is less than specified, replacement of both wear strips is necessary.

Fig. 9-197



AG530D

Fig. 9-198

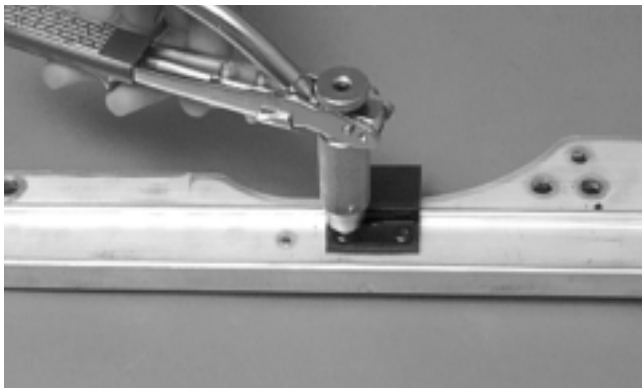


0727-726

INSTALLING

1. Install the shock pads and retaining brackets; then secure with rivets.

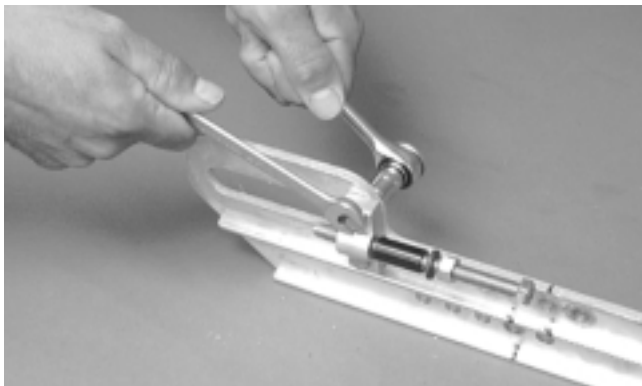
Fig. 9-199



AG531D

2. Secure the track adjuster bracket with the cap screws and lock nuts. Tighten to 1.5 kg-m (11 ft-lb).

Fig. 9-200



AG527D

3. Place the rail into position; then install the adjuster bushing and rear idler wheel. Secure with a cap screw (coated with red Loctite #271) and flat washer. Tighten to 3.2 kg-m (23 ft-lb); then install the wheel insert.

Fig. 9-201



AG551D

Fig. 9-202



AG626D

4. Install the rear arm limiter cap screw (coated with red Loctite #271) in the appropriate hole (as noted during disassembly) and tighten to 3.2 kg-m (23 ft-lb).
5. Install the rear inner idler wheels in the appropriate hole as noted during disassembly and secure with cap screws (coated with red Loctite #271) and lock nuts. Tighten to 3.2 kg-m (23 ft-lb).

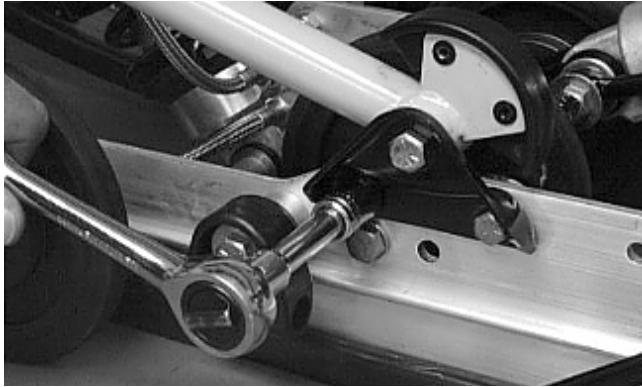
Fig. 9-203



AG592D

6. Secure the front arm mounting bracket with the cap screws (coated with red Loctite #271) and lock nuts. Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-204



AG497D

7. Place the spring into the slide blocks; then place the spring slide and slide block assembly into position on the slide rail. Secure with a cap screw (coated with red Loctite #271) and washer. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-205



AG680D

Fig. 9-206

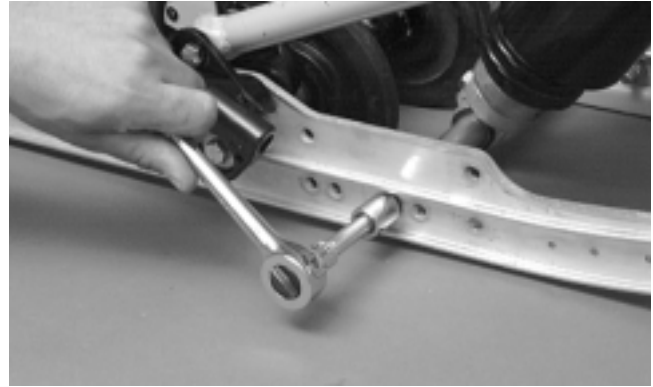


AG593D

8. Secure the front shock absorber axle with a new cap screw (coated with green Loctite #609) and lock washer. Tighten to 4.2 kg-m (30 ft-lb).

■ **NOTE:** Make sure the axle threads are clean; also, always use new cap screws whenever installing.

Fig. 9-207



AG514D

9. Secure the outer idler wheel mounting block with the cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-208



AG686D

10. Secure the outer idler wheel to the mounting block with a cap screw, flat washers, idler wheel, axle, and a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

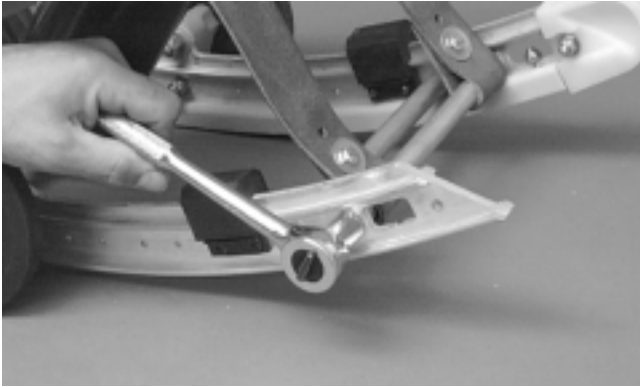
Fig. 9-209



AG512D

11. Secure the crossbraces with cap screws (coated with red Loctite #271). Tighten to 1.5 kg-m (11 ft-lb).

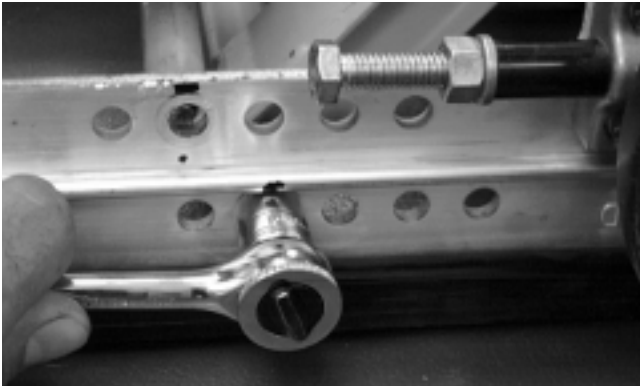
Fig. 9-210



AG511D

12. Install the rear arm in the appropriate hole as noted during disassembly; then secure with a cap screw (coated with red Loctite #271) and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-211



AG694D

■ **NOTE:** Apply a light coat of grease to the slide rail surface to aid in installing a new wear strip. If there are any sharp edges on the lower portion of the rail, use a file to remove them.

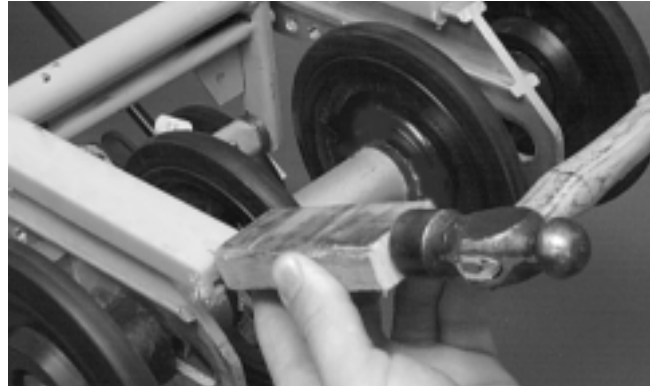
Fig. 9-212



AG534D

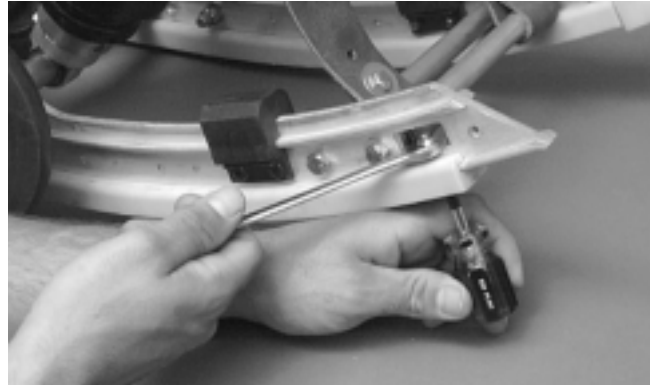
13. From the back, start the wear strip onto the rail; then using a block of wood and a hammer, drive the wear strip forward into position. Secure with a machine screw and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Fig. 9-213



AG535D

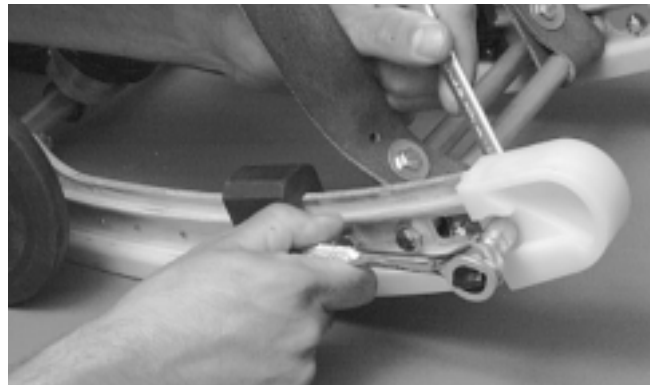
Fig. 9-214



AG509D

14. Secure the end cap onto the slide rail using a cap screw, flat washers, and a lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Fig. 9-215

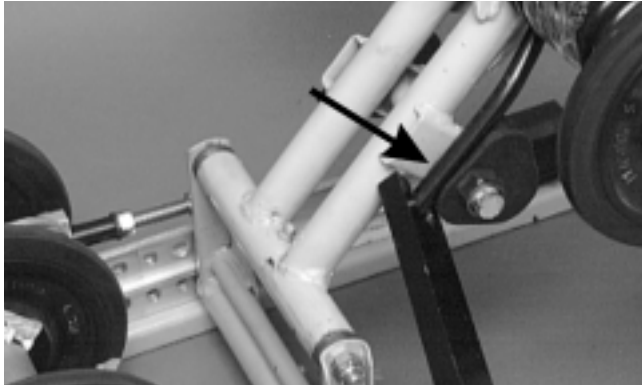


AG506D

■ **NOTE:** On models with remote adjuster, install all cable ties securing the hose to the slide rail and arm.

15. Install the short spring leg onto the adjusting cam.

Fig. 9-216



AG516DA

16. Adjust suspension.
17. After the skid frame has been installed, adjust track tension deflection (see Track Tension in this sub-section) and track alignment (see Track Alignment in this sub-section).

Installing Skid Frame

1. Place a piece of cardboard on the floor to protect against scratching and tip the snowmobile onto one side.
2. Pull the track away from the tunnel and spread open; then place the skid frame into the track.
3. Position the front of the skid frame into the tunnel and align the front arm with the appropriate mounting hole in the tunnel. Insert the cap screw with washers through the tunnel mounting hole and through the front arm. **DO NOT TIGHTEN AT THIS TIME.** Repeat this procedure on the other side.

■ **NOTE:** To aid in centering the front arm with the hole in the tunnel, position the skid frame and track at a 45° angle to the bottom of the tunnel.

4. Elevate the rear of the skid frame and the track into position in the tunnel.
5. Align the offset pivot idler arm assembly with the appropriate hole in the tunnel. Secure the offset pivot idler arm assembly with a cap screw (coated with red Loctite #271), lock washer, and flat washer. **DO NOT TIGHTEN AT THIS TIME.**

■ **NOTE:** Do not install the short legs of the rear springs onto the adjusting cams at this time.

6. At this time, tighten all four skid frame mounting cap screws to 3.2 kg-m (23 ft-lb).

7. Using the Rear Suspension Spring Tool (p/n 0144-311), install the short legs of the rear springs onto the adjusting cams making sure the cams are in the same adjustment positions.

■ **NOTE:** On models with remote adjuster, guide the adjuster reservoir hose through the hole in the left-side tunnel panel. Route the hose through the clamp attached to the speedometer drive; then attach to the quick-coupler.

8. Tighten the two track tension adjusting bolt evenly until track deflection is within specifications; then lock the jam nuts to secure the adjustment.
9. Check track tension deflection and alignment; adjust if necessary (see Track Tension and Track Alignment in this sub-section).

Track Tension

⚠ WARNING

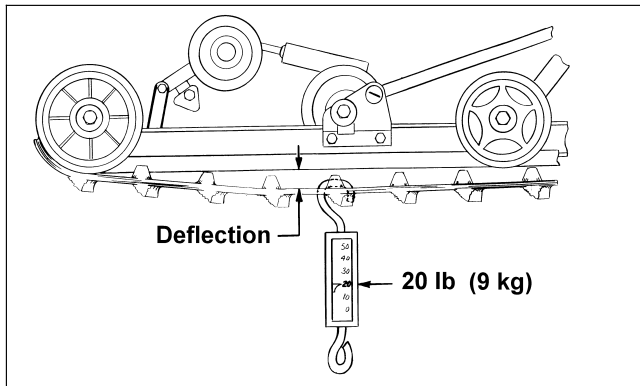
Deactivate all switches.

CHECKING DEFLECTION

1. Tip the snowmobile on its side.
2. Hook a spring scale around a track clip at mid-span; then pull the track down with the scale to 9 kg (20 lb) and measure the distance between the bottom of the wear strip and the inside surface of the track clip. Track deflection must be within specifications.

Rear Suspension Style	Setup Tension	After Break-In Tension
FasTrack w/o Torque Sensing Link	19-25 mm (3/4-1 in.)	25-32 mm (1-1 1/4 in.)
FasTrack w/Torque Sensing Link (121 in. Track)	32-38 mm (1 1/4-1 1/2 in.)	38-44 mm (1 1/2-1 3/4 in.)
FasTrack w/Torque Sensing Link (136 in. Track)	38-44 mm (1 1/2-1 3/4 in.)	50.8-57.2 mm (2-2 1/4 in.)

Fig. 9-217



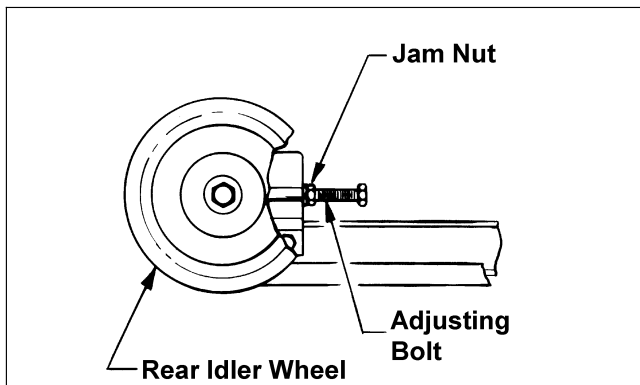
729-429A

■ **NOTE:** If the track is new, it will stretch slightly and take a “set” within the first 300 to 500 miles of operation.

ADJUSTING DEFLECTION

1. Place the snowmobile up on a shielded safety stand. Check to make sure the track is 2-3 in. off the floor.
2. If the measurement is not as specified, loosen the jam nuts of the adjusting bolts.

Fig. 9-218



0727-456

3. If the measurement obtained in step 2 is more than specified, tighten the adjusting bolts. If the measurement obtained is less than specified, loosen the adjusting bolts. When the measurement is within specification range, lock the adjustment by bottoming the jam nuts against the axle housings.

■ **NOTE:** Vigorously push the underside of the track up and down. Track must not hit the top of the tunnel or slap the skid frame.

4. After correct track tension is obtained, check track alignment (see Track Alignment in this sub-section).

■ **NOTE:** Track tension and track alignment are interrelated; always check both even if only one adjustment seems necessary. Always establish correct track tension before checking and/or adjusting alignment.

Track Alignment

■ **NOTE:** Proper track alignment is when the rear idler wheels are equidistant from the inner drive lugs on the inside surface of the track.

CHECKING

1. Using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.

⚠ WARNING

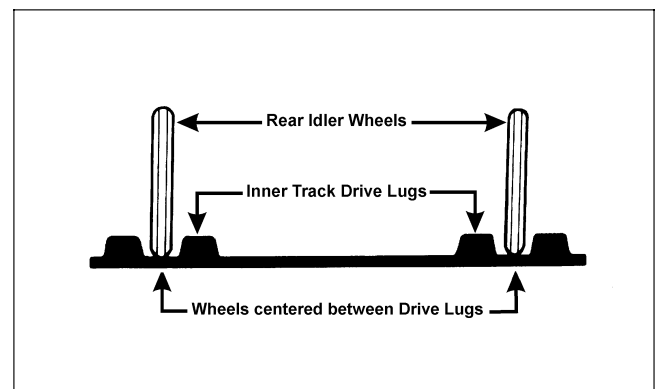
The tips of the skis must be positioned against a wall or similar object for safety. Keep hands, feet, and clothing away from moving components.

2. Start the engine and accelerate slightly. Use only enough throttle to rotate the track several revolutions. SHUT THE ENGINE OFF.

■ **NOTE:** Allow the track to coast to a stop. Do not apply the brake because it could produce inaccurate alignment conditions.

3. When the track stops rotating, check the relationship of the rear idler wheels and the inner track drive lugs. If the distance from the idler wheels to the inner drive lugs is the same on both sides, no adjustment is necessary.

Fig. 9-219



725-070A

4. On the side of the track which has the inner drive lugs closer to the rear idler wheel, loosen the adjusting bolt jam nut; then rotate the adjusting bolt clockwise 1-1 1/2 turns.
5. Continue to check the track alignment and make the necessary adjustments until proper alignment is obtained.
6. After proper track alignment is obtained, lock the jam nut against the axle housing.

■ **NOTE:** Make sure correct track tension is maintained after adjusting track alignment.

■ **NOTE:** Field test the track under actual conditions and, after the field test, check track alignment and track tension; adjust as necessary.

Repair Procedure 2 - Track/Rear Suspension

This Track/Rear Suspension sub-section (Repair Procedure 2) has been organized so each procedure can be completed individually and efficiently. Each sub-section has (as necessary) Removing, Disassembling, Cleaning and Inspecting, Assembling, and Installing procedures.

■ **NOTE:** Some photographs used in this sub-section are used for clarity purposes only and are not designed to depict actual conditions.

Removing Skid Frame

■ **NOTE:** Many service procedures can be performed without removing the skid frame. Closely observe the note introducing each sub-section for this important information.

1. Loosen the jam nuts and two track-tension adjusting bolts.

Fig. 9-220



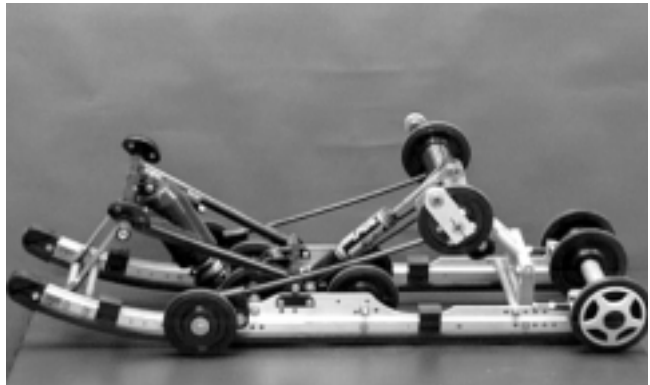
AG670D

2. Place a support stand under the rear bumper; then while holding the flared bushing, remove the rear cap screws securing the skid frame to the tunnel. Account for lock washers and flat washers.

■ **NOTE:** The support stand should hold the snowmobile level but not raised off the floor.

3. Remove the front cap screws securing the skid frame to the tunnel. Account for a flat washer and a lock washer.
4. Remove the support stand; then tip the snowmobile onto one side using a piece of cardboard to protect against scratching. Remove the skid frame.

Fig. 9-221



AG671D

Wear Strips

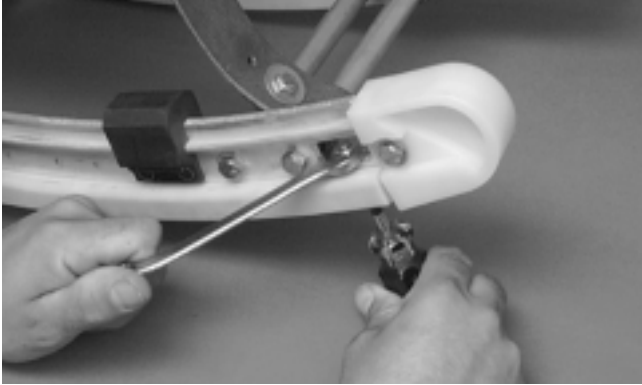
REMOVING

■ **NOTE:** It is possible to remove and install a wear strip without removing the skid frame. To do this, remove the machine screw and lock nut securing the wear strip at the front of the slide rail; then align the wear strip with openings (windows) in the track and drive it rearward off the slide rail. Apply low-temperature grease to the new wear strip and slide rail; then align the wear strip with openings (windows) in the track and drive it forward onto the slide rail. Secure with the machine screw and lock nut.

■ **NOTE:** The skid frame should be removed for this procedure (see Removing Skid Frame in this sub-section).

1. Remove the machine screw and lock nut securing the wear strip to the front of the slide rail.

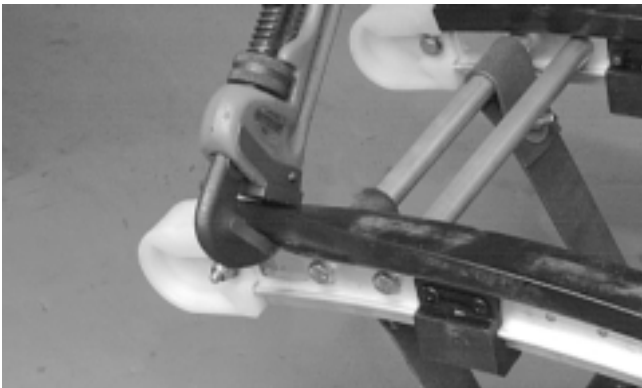
Fig. 9-222



AG504D

2. Using a pipe wrench and starting from either end, hook the edge of the wear strip with the pipe wrench jaw and twist the wear strip off the slide rail. Move the pipe wrench 7.5 cm (3 in.) and again twist the wear strip off the rail. Repeat this procedure until the wear strip is free of the rail.

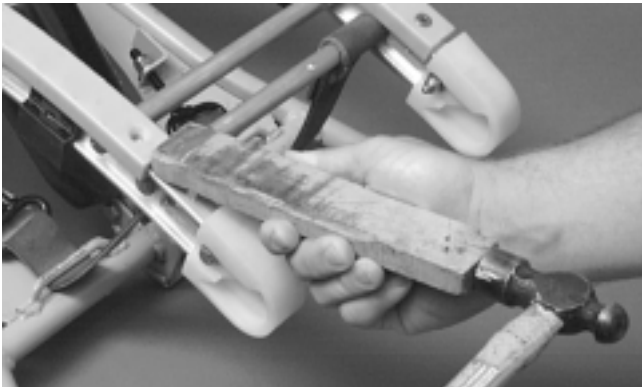
Fig. 9-223



AG617D

■ **NOTE:** The wear strip can also be driven off the slide rail; however, it is quicker to use a pipe wrench.

Fig. 9-224



AG505D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

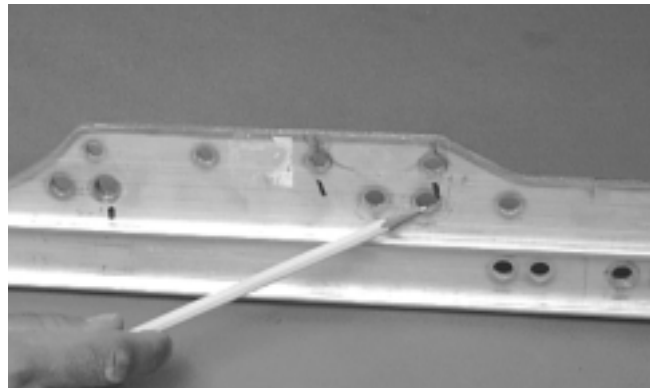
1. Clean the slide rail using parts-cleaning solvent and compressed air.

WARNING

Always wear an approved pair of safety glasses when using compressed air.

2. Inspect the slide rail for cracks. If any cracks are found, replace the slide rail.

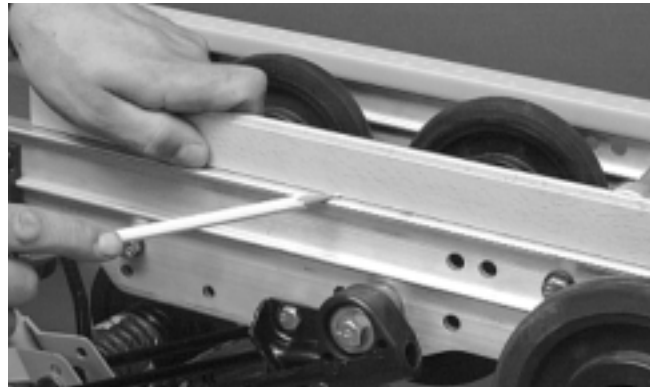
Fig. 9-225



AG529D

3. Using a straightedge, inspect the slide rail for any unusual bends. Place the straightedge along the bottom surface of the slide rail. If the rail is found to be bent, it must be replaced.

Fig. 9-226



AG536D

INSTALLING

■ **NOTE:** Apply a light coat of grease to the slide rail surface to aid in installing a new wear strip. If there are any sharp edges on the lower portion of the rail, use a file to remove them.

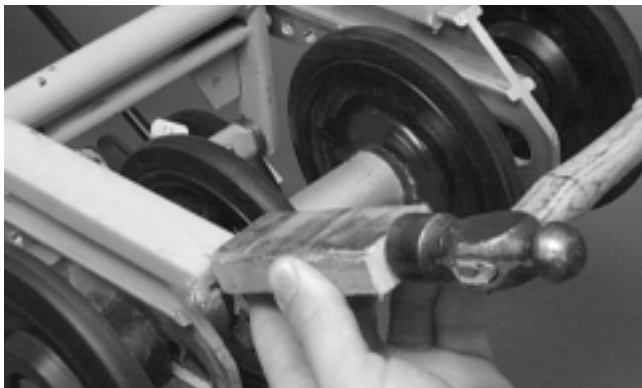
Fig. 9-227



AG534D

1. From the back, start the wear strip onto the rail; then using a block of wood and a hammer, drive the wear strip forward into position.

Fig. 9-228



AG535D

2. Secure with a machine screw and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

End Caps

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the lock nut, washers, and cap screw securing the end cap.

Fig. 9-229



AG506D

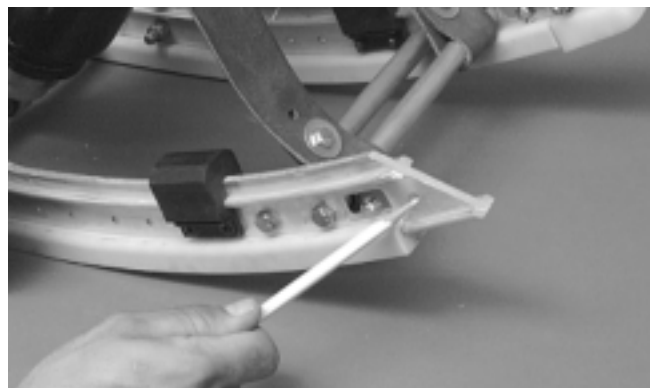
2. Using a hammer, tap the end cap off the rail.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the end cap area of the slide rail for cracks and wear.

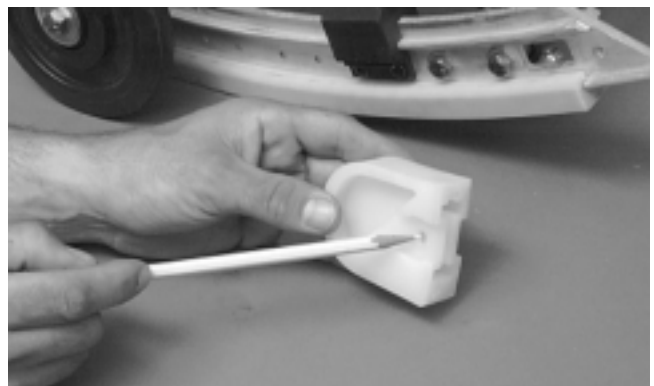
Fig. 9-230



AG507D

2. Inspect the end cap for any signs of cracking or wear.

Fig. 9-231



AG508D

3. Clean both the slide rail area and the end cap. Using compressed air, clean the areas of dirt and gravel.

⚠ WARNING

Always wear an approved pair of safety glasses when using compressed air.

4. Inspect the cap screw for cracked, stretched, or damaged threads. Use a new lock nut when assembling.

INSTALLING

1. Position the end cap on the slide rail; then align the hole in the end cap with the hole in the slide rail.
2. Secure with a cap screw, washers, and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

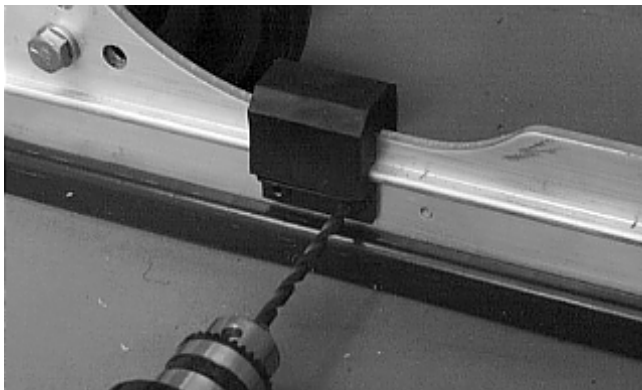
Shock Pads

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Using a 3/16-in. drill bit drill out the rivets securing the shock pad to the slide rail. Account for the retaining brackets.

Fig. 9-232



AG476D

2. Remove the shock pad.

INSPECTING

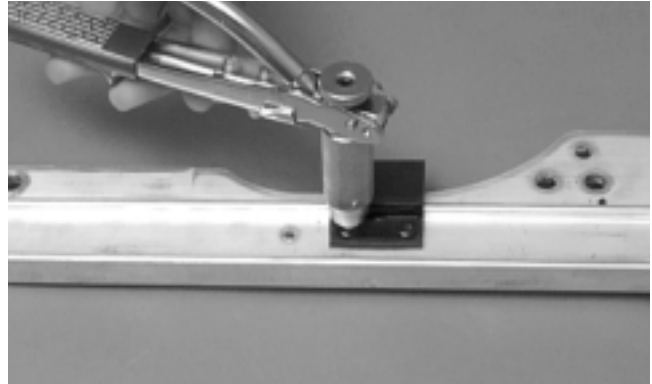
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the pad and retaining brackets for damage or wear.
2. Inspect the rivet holes in the slide rail for damage or elongation.

INSTALLING

1. Place the pad and retaining brackets into position on the slide rail.
2. Secure the pad assembly with rivets.

Fig. 9-233



AG531D

Front Outer Idler Wheels

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

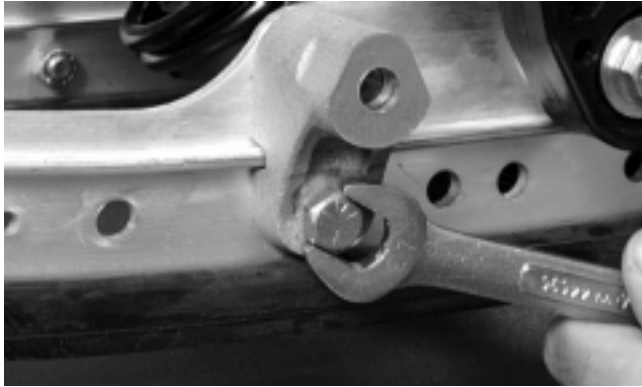
1. Remove the cap screws and lock nuts securing the front outer idler wheel and the idler wheel mounting block. Account for flat washers and an axle.

Fig. 9-234



AG678D

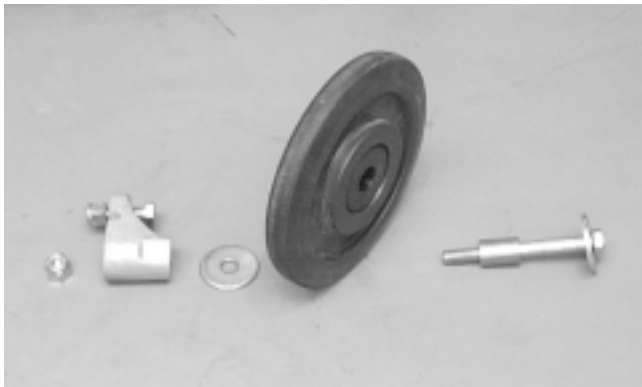
Fig. 9-235



AG686D

2. Note the locations of the flat washers for assembly purposes. The washers are to be installed next to the idler wheels.

Fig. 9-236



AG622D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and each plastic hub for cracks or damage.
3. Rotate the idler wheel bearing (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.



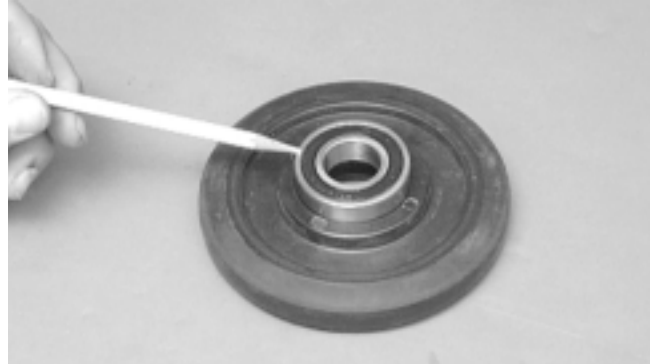
CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out from the inside of the wheel.

- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-237



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

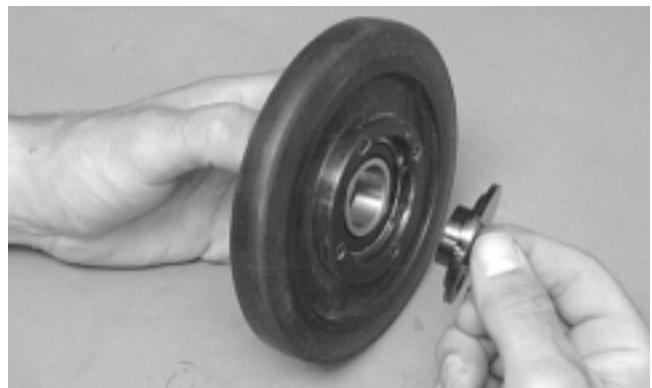
Fig. 9-238



AG539D

- E. Install the insert.

Fig. 9-239

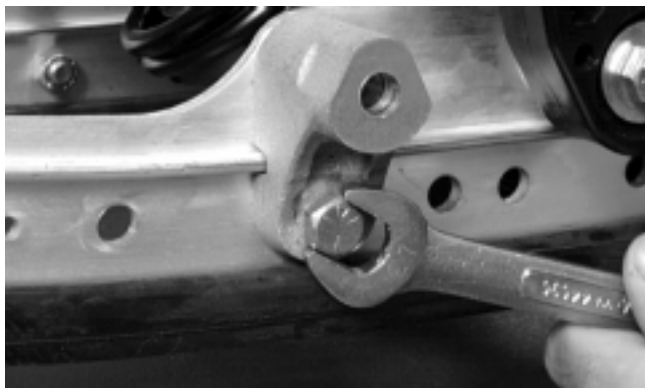


AG540D

INSTALLING

1. Secure the mounting block on the slide rail with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

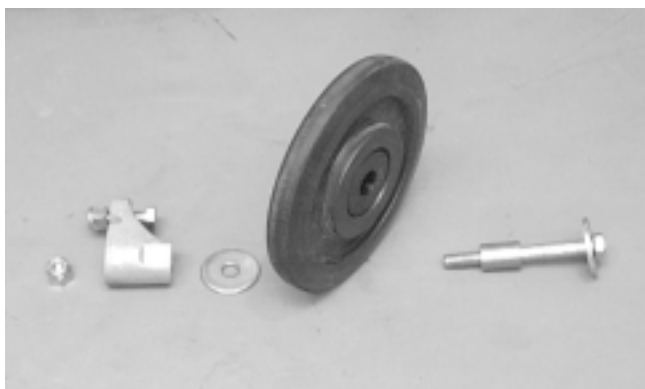
Fig. 9-240



AG686D

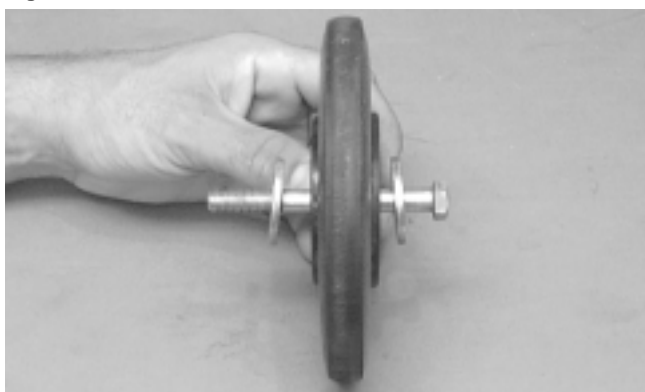
2. Place the idler wheel and axle against the mounting block making sure there is a flat washer on both sides of the idler wheel.

Fig. 9-241



AG622D

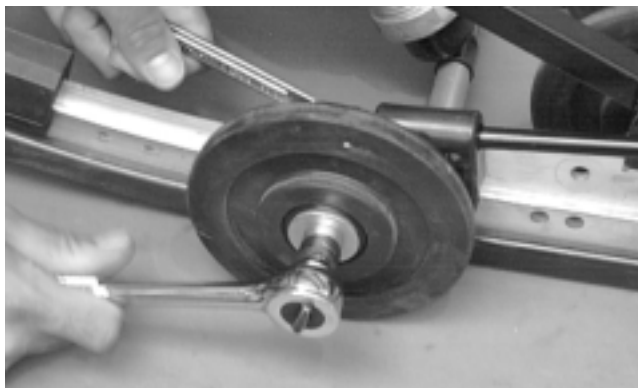
Fig. 9-242



AG623D

3. Secure the idler wheel assembly with a cap screw and a lock nut. Tighten cap screws to 3.2 kg-m (23 ft-lb).

Fig. 9-243



AG618D

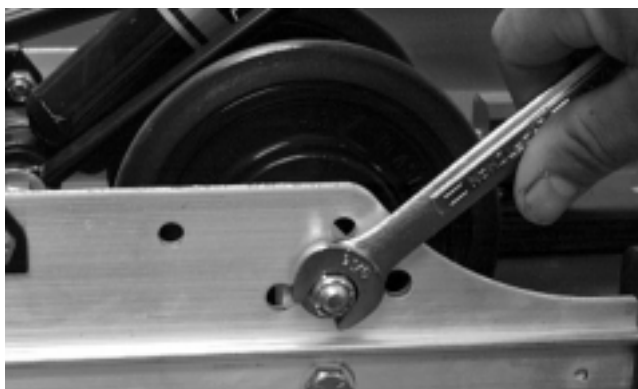
Rear Inner Idler Wheels

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the cap screws and lock washers securing the rear inner idler wheel and the idler wheel mounting block. Account for a flat washer and an axle.

Fig. 9-244



AG672D

Fig. 9-245

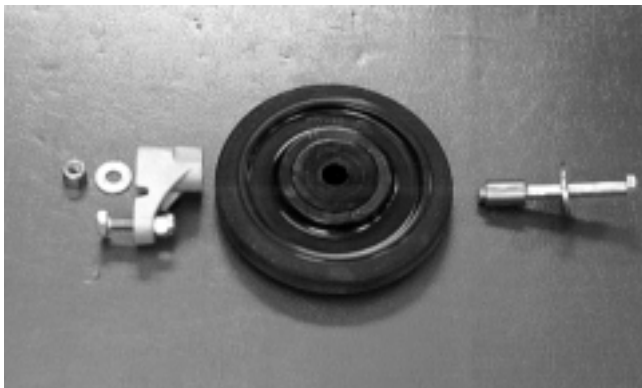


AG673D

2. Note the locations of the flat washers for assembly purposes.

■ **NOTE:** The large, thick washer must be installed next to the idler wheel. The small, thin washer must be installed against the slide rail.

Fig. 9-246



AG674D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

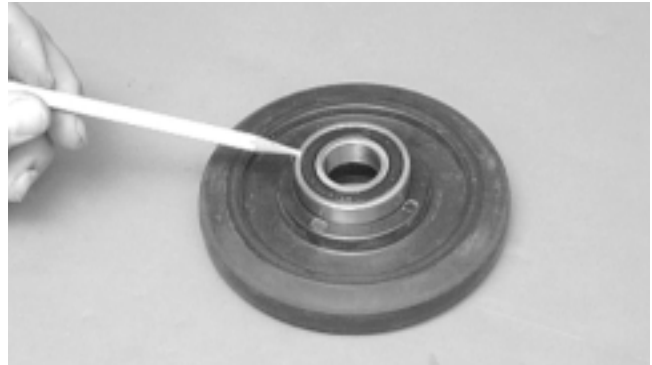
1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and plastic hub for cracks or damage.
3. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.

CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-247



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

Fig. 9-248



AG539D

- E. Install the insert.

Fig. 9-249

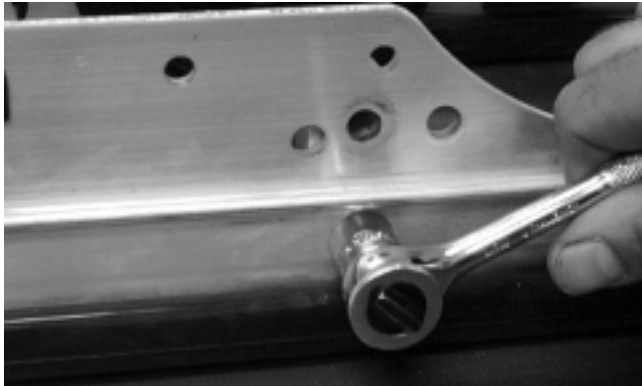


AG540D

INSTALLING

1. Secure the mounting block on the slide rail with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

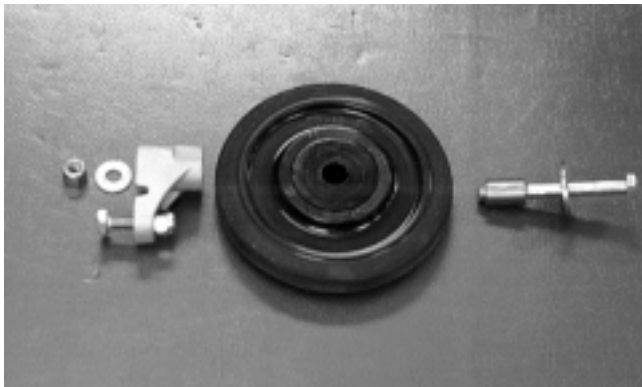
Fig. 9-250



AG673D

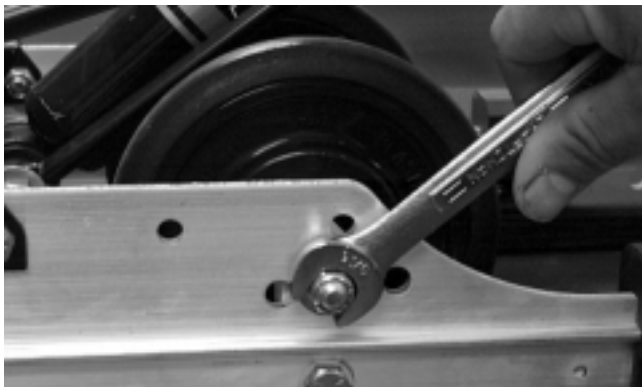
2. Place the idler wheel and axle into position against the mounting block making sure there is a flat washer on the inside of the idler wheel. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-251



AG674D

Fig. 9-252



AG672D

Rear Upper Idler Wheels/Rear Springs

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

REMOVING

1. Using the Rear Suspension Spring Tool (p/n 0144-311), remove the spring from the adjusting cam.

WARNING

Care must be taken when removing the spring or damage or injury could result.

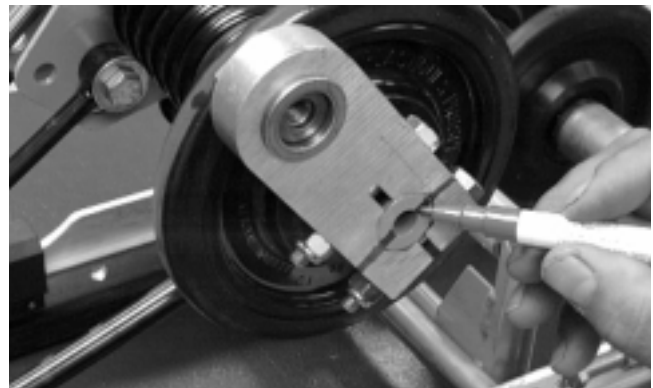
Fig. 9-253



AG624DA

2. Mark the offset pivot idler and the idler arm for assembly purposes.

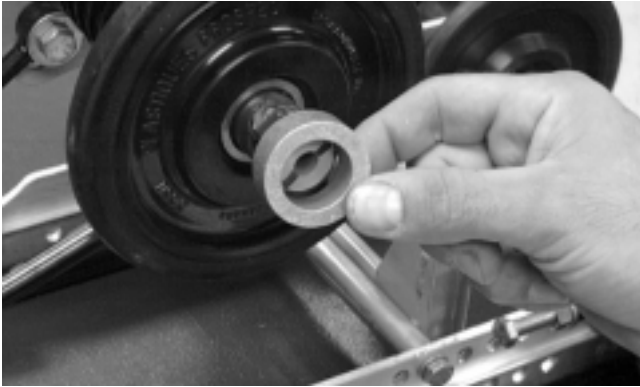
Fig. 9-254



AG675D

3. Remove the cap screws, washers, and lock nuts securing the offset pivot idler to the upper idler wheel; then remove the offset pivot idler assembly.
4. Remove the spacer.

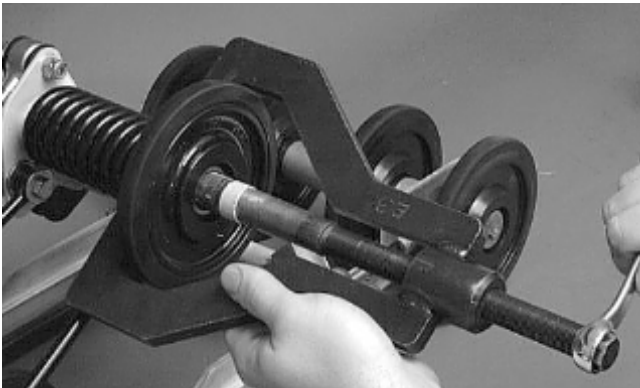
Fig. 9-255



AG677D

■ **NOTE:** It may be necessary to use the Idler Wheel Puller Kit (p/n 0644-122) to remove the wheel.

Fig. 9-256



AG461D

5. Remove the cap screw, washer, and lock nut securing the front outer idler wheel; then remove the idler wheel.

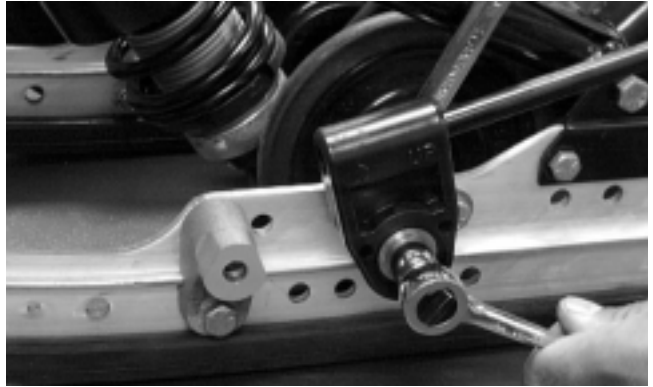
Fig. 9-257



AG678D

6. Remove the cap screw and flat washer securing the spring slide to the rail. Account for a slide block and washer.

Fig. 9-258



AG679D

Fig. 9-259



AG680D

7. Remove the spring and sleeve from the idler arm.

Fig. 9-260



AG681D

■ **NOTE:** Use the same procedure for the other side.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearing with a clean cloth.
2. Inspect each idler wheel and plastic hub for cracks or damage.

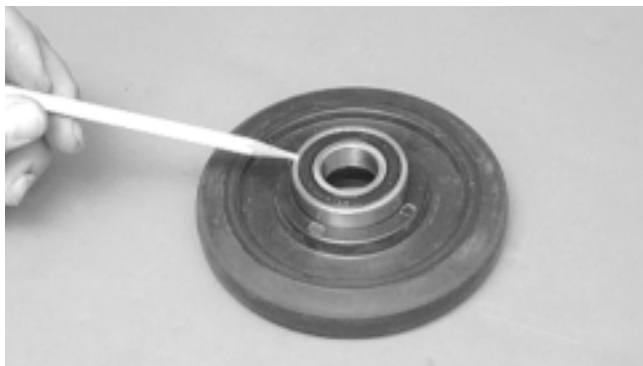
3. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.
4. If a bearing must be replaced, use this procedure.

⚠ CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-261



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

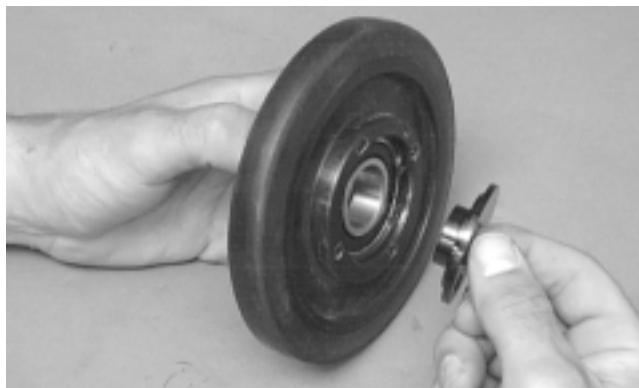
Fig. 9-262



AG539D

- E. Install the insert.

Fig. 9-263



AG540D

5. Inspect the spring, spring slide, sleeve, washers, slide block insert, and shaft area for wear.
6. Inspect the adjusting cams and arms for cracks.

INSTALLING

1. Slide the sleeve and spring onto the idler arm.

Fig. 9-264



AG681D

2. Place the spring slide and slide block (with spring in slide block) into position on the slide rail. Secure with a cap screw (coated with red Loctite #271) and washer. Tighten to 3.2 kg-m (23 ft-lb).

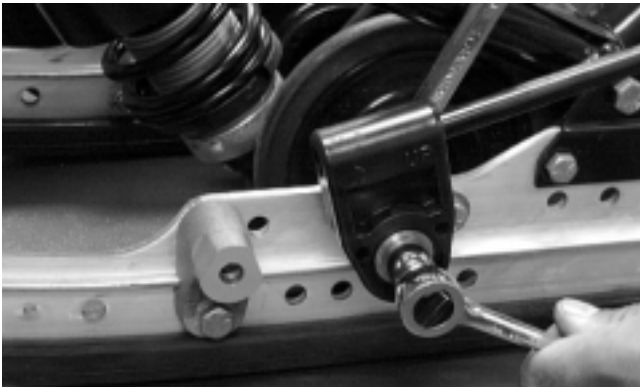
■ NOTE: Make sure the spring is located above the spring slide mounting bolt.

Fig. 9-265



AG680D

Fig. 9-266



AG679D

3. Install the front outer idler wheel; then secure with the cap screw, washer, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

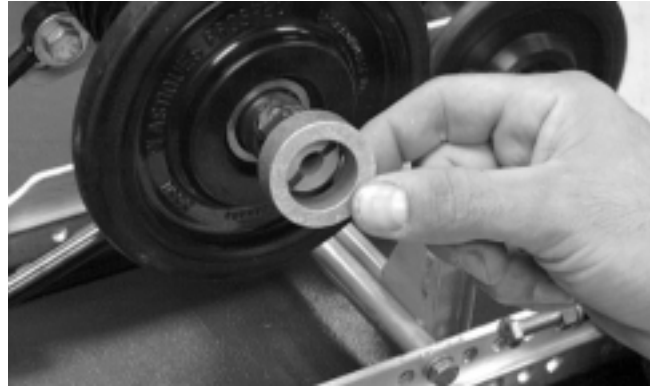
Fig. 9-267



AG678D

4. Install the spacer.

Fig. 9-268



AG677D

5. Install the rear upper idler wheel on the idler arm.

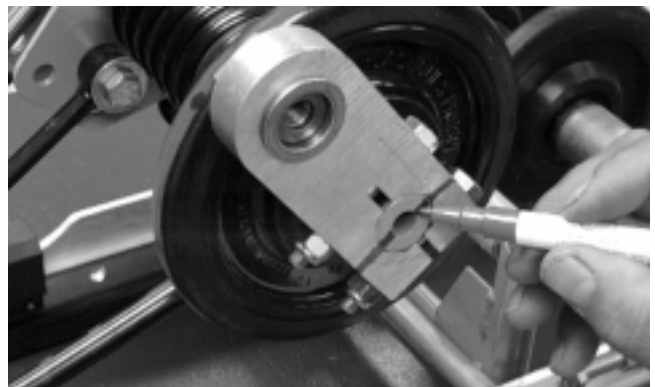
Fig. 9-269



AG545D

6. Making sure the marks made during disassembly are aligned, install the offset pivot idler to the idler arm and secure with the cap screws, washers, and lock nuts. Tighten to 2.6 kg-m (19 ft-lb).

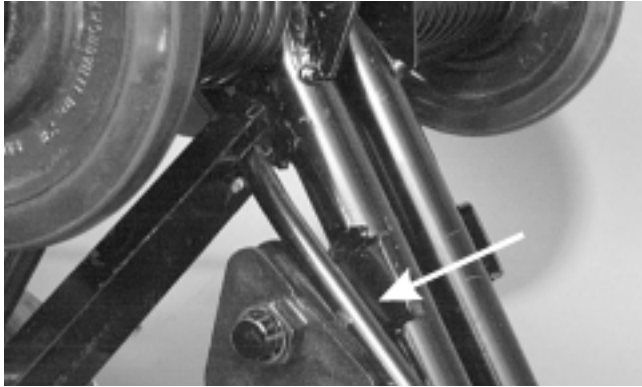
Fig. 9-270



AG675D

7. Place the short spring leg onto the adjusting cam using the rear suspension spring tool.

Fig. 9-271



AG624DA

Rear Axle and Idler Wheels

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Remove the insert from the idler wheel; then remove the cap screw and large flat washer securing the outer rear idler wheel. Remove the outer idler wheel from the shaft.

Fig. 9-272

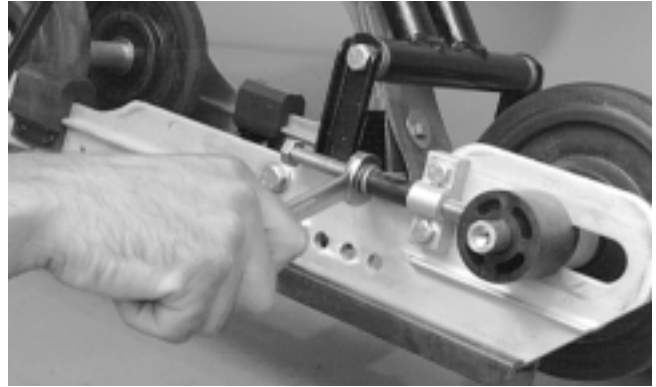


AG626D

■ **NOTE:** The large flat side of the wheel insert is positioned next to the inner plastic adjuster bushing. The idler wheel must be installed with the wheel insert properly positioned.

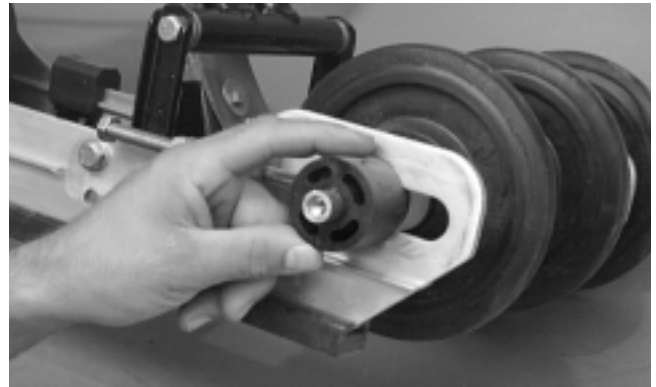
2. Loosen the track adjusting bolts. Slide the outer adjuster bushings off the axle.

Fig. 9-273



AG627D

Fig. 9-274



AG628D

3. Carefully slide the shaft out from the inner idler wheels and note the position of the spacers and washers.

Fig. 9-275



AG805D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearings with a clean cloth.
2. Inspect all idler wheel inserts (inner and outer) for any cracks.

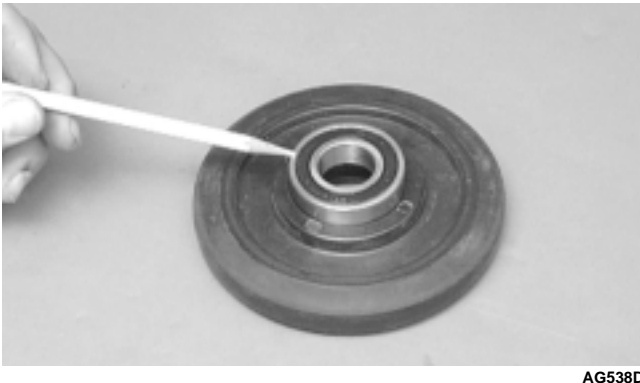
3. Inspect the outer rubber portion of the idler wheels for cracks and poor bonding.
4. Inspect the plastic insert of each idler wheel for cracks.
5. Inspect the shaft for wear and damaged threads.
6. Inspect all idler wheel bearings. Turn each bearing (by hand) and if any roughness or binding is noted, replace the bearing.
7. If a bearing must be replaced, use this procedure.

⚠ CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-276



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

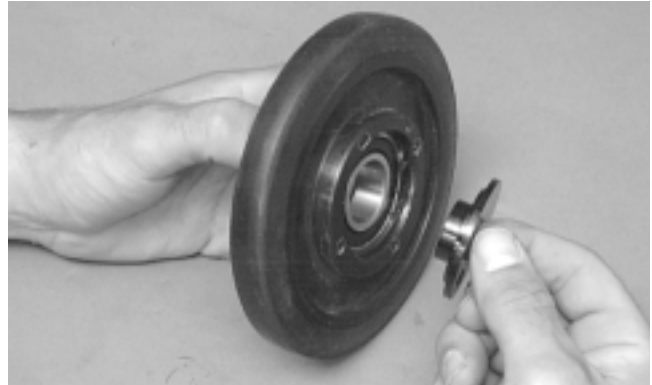
Fig. 9-277



AG539D

- E. Install the insert.

Fig. 9-278



AG540D

ASSEMBLING

1. In order from the right-hand side, slide the axle through the slide rail axle bracket; then place a flat washer, short spacer with bushings, inner idler wheel with insert, long spacer with bushings, and flat washer on the axle. Slide the axle through the opposite slide rail axle bracket. Place the plastic adjuster bushings on the axle (on the outside of each axle bracket). Make sure the hole in the adjuster bushing is aligned directly with the adjusting bolt.

Fig. 9-279



AG805D

Fig. 9-280



AG551D

2. Place the outer idler wheels on the axle (with the large flat of the insert directed inward) and secure with two cap screws (coated with red Loctite #271) and large flat washers. Tighten cap screws to 3.2 kg-m (23 ft-lb); then install the inserts.

Fig. 9-281



AG626D

3. Adjust track alignment (see Track Alignment in this sub-section).
4. Adjust track tension deflection (see Track Tension in this sub-section).

Idler Arm

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Remove the rear upper idler wheels and springs (see Rear Upper Idler Wheels/Rear Springs in this sub-section).

Fig. 9-282



AG545D

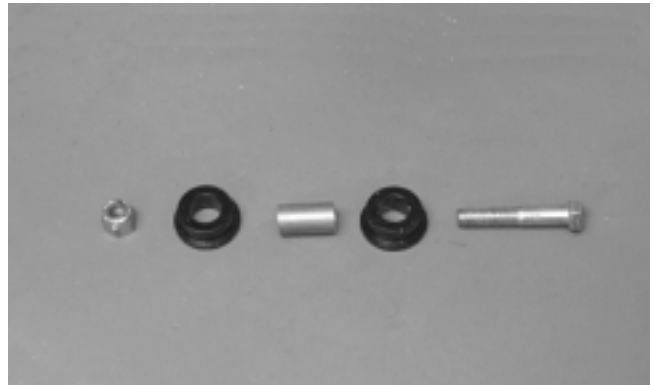
2. Remove the cap screw and lock nut securing the upper shock eyelet to the idler arm. Account for a spacer, lock nut, and bushings.

Fig. 9-283



AG467D

Fig. 9-284



AG553D

■ **NOTE:** Mark the hole that the upper shock links are mounted in for assembly purposes.

Fig. 9-285



AG554D

3. Remove the cap screw and lock nut securing the upper shock links to the idler arm. Account for a lock nut, spacer, flat washers, and axle links.

Fig. 9-286



AG682D

Fig. 9-289



AG558D

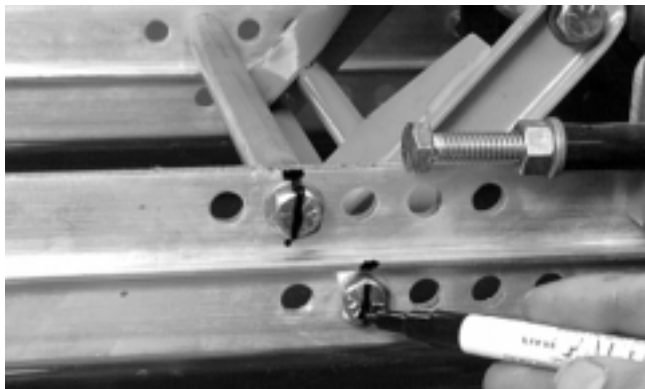
Fig. 9-287



AG556D

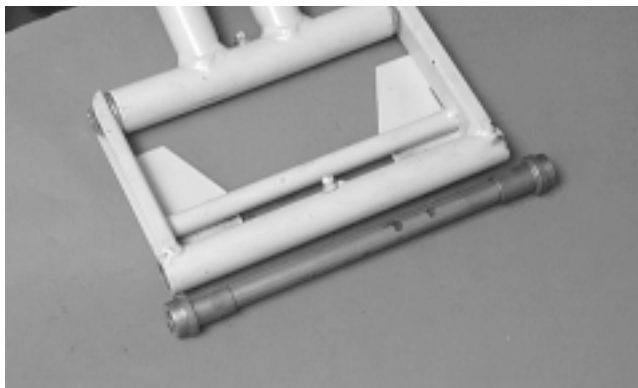
■ **NOTE:** Note the mounting hole from which the rear arm was removed for assembly purposes.

Fig. 9-288



AG683D

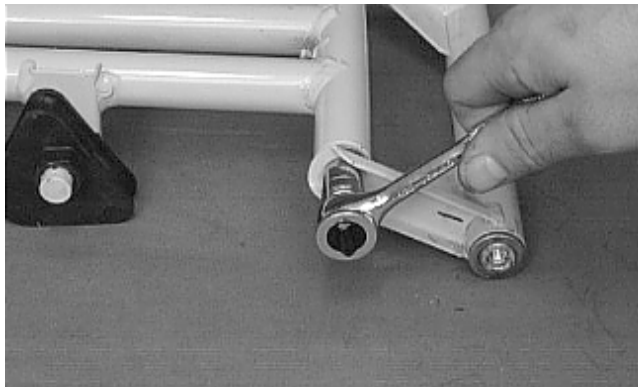
Fig. 9-290



AG560D

5. Remove the cap screw and lock nut securing the rear arm to the idler arm. Account for the aluminum axle and bushing assemblies.

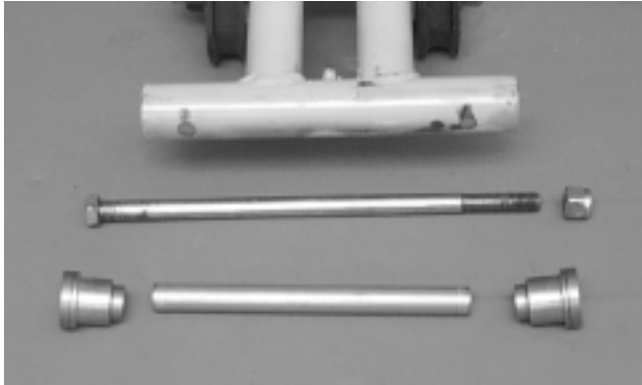
Fig. 9-291



AG477D

4. Remove the cap screw and lock nut securing the rear arm to the slide rail. Account for the serrated axles and axle tube.

Fig. 9-292



AG561D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearings with a clean cloth.
2. Inspect each idler wheel for cracks or damage.
3. Inspect the bushings (located in the arm pivot area) for wear or damage.
4. Inspect all welds and the tubing of the upper arm for cracks or unusual bends.
5. Inspect the two adjusting cams for damage.
6. Rotate the idler wheel bearings (by hand) and check for binding or roughness.
7. If a bearing must be replaced, use this procedure.

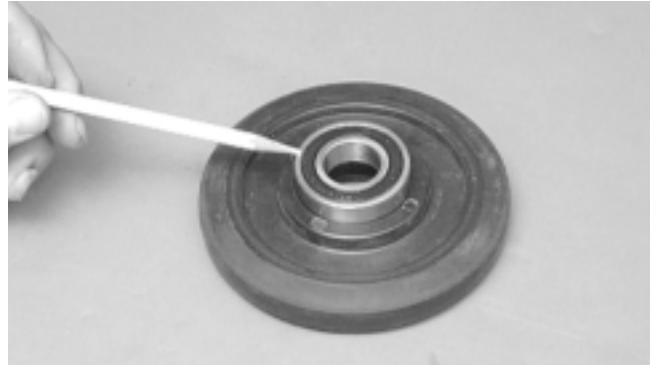


CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-293



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

Fig. 9-294



AG539D

- E. Install the insert.

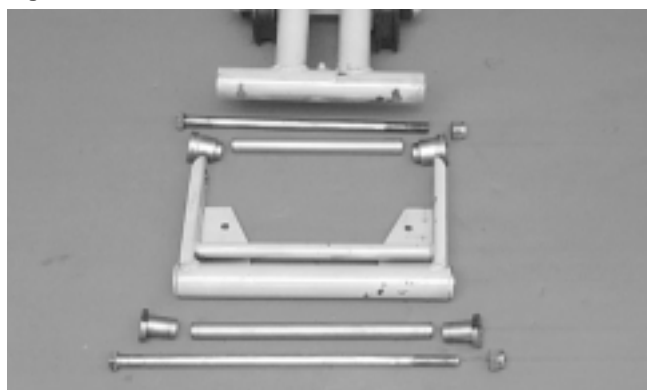
Fig. 9-295



AG540D

ASSEMBLING

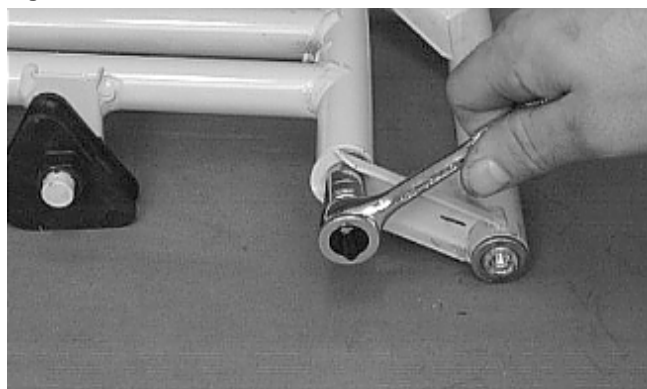
Fig. 9-296



AG562D

1. Install the rear arm onto the idler arm with an aluminum axle, bushing assemblies, cap screw, and a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

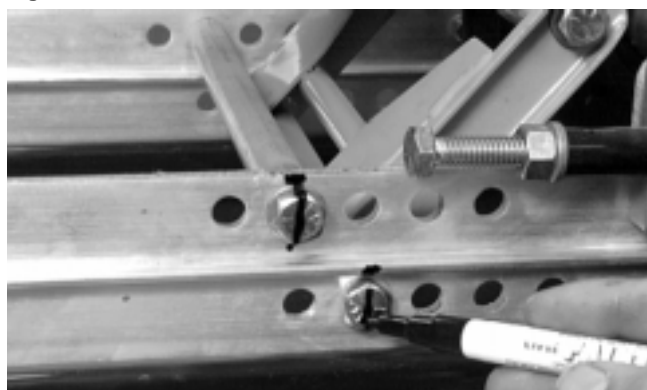
Fig. 9-297



AG477D

■ **NOTE:** Install the rear arm assembly into the appropriate mounting hole as noted during disassembly.

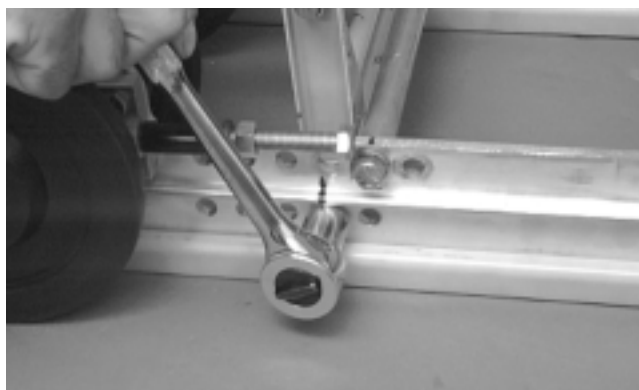
Fig. 9-298



AG683D

2. Place the rear arm assembly into position (with the brace facing towards the front). Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-299



AG558D

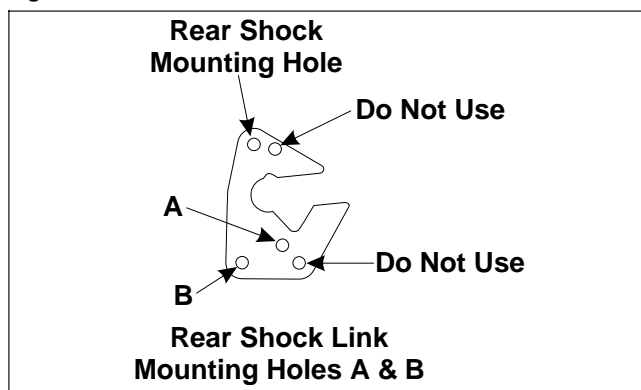
3. Position the shock links in the appropriate holes of the idler arm brackets (hole A). Place a spacer between the center of the brackets; then place a flat washer on the cap screw. Insert the axle links into the upper shock link eyelets; then insert the cap screw with washer through the eyelets. Secure with a cap screw, washer, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-300



AG556D

Fig. 9-301



732-688F

Fig. 9-302



AG682D

4. Place the upper shock eyelet with bushings between the idler arm brackets making sure the spacer is properly positioned between the brackets. Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-303



AG467D

■ **NOTE:** Do not over-tighten the shock absorber cap screw as the shock eyelet must be free to pivot.

5. Grease the idler arm and rear arm grease fittings with a low-temperature grease.
6. Install the rear upper idler wheels, rear springs, and offset pivot idler (see Rear Upper Idler Wheels/Rear Springs in this sub-section).

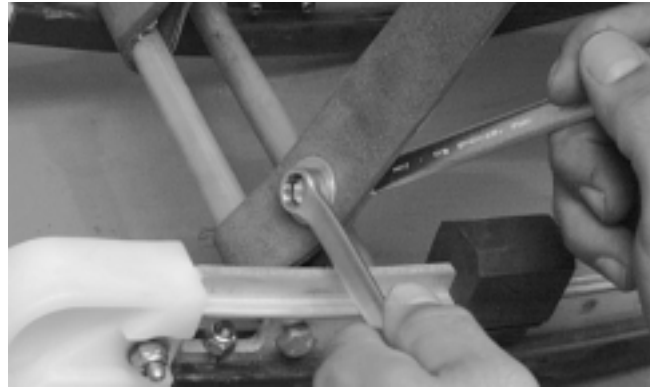
Front Arm/Front Shock Absorber/Front Inner Idler Wheels

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section), and the rear springs must be removed from the adjusting cams.

REMOVING

1. Remove the lower cap screws and lock nuts securing the limiter straps to the rail support. Account for flat washers.

Fig. 9-304



AG632D

2. Remove the cap screw and lock nut securing the upper front shock absorber eyelet to the front arm. Pull the shock eyelet free of the bracket. Account for a serrated axle.

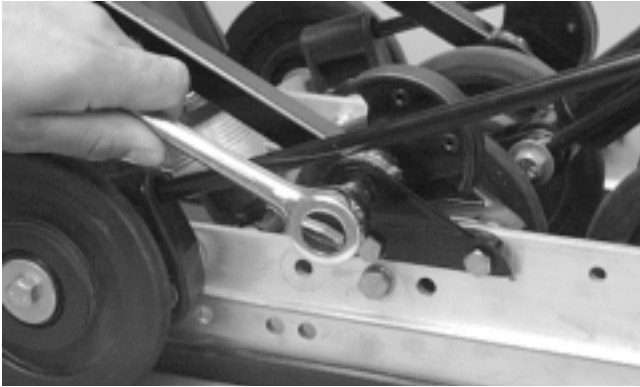
Fig. 9-305



AG582D

3. Remove the cap screw and lock nut securing the front arm to the front arm mounting brackets.

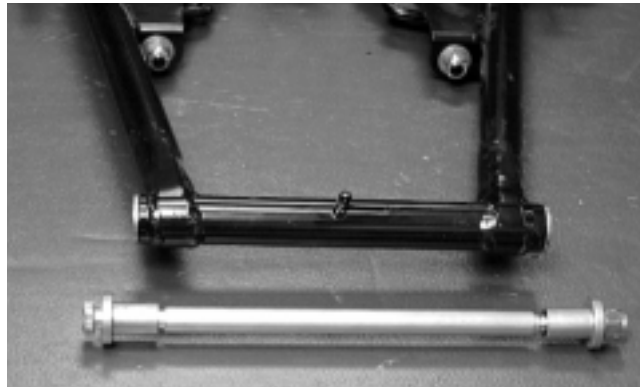
Fig. 9-306



AG633D

4. Remove the front arm and account for an axle tube and serrated axles.

Fig. 9-307



AG685D

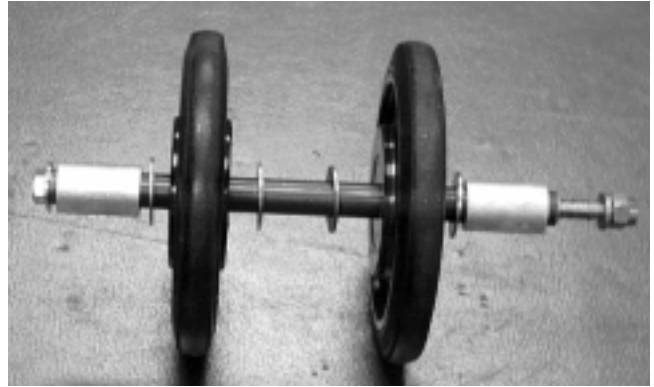
5. Remove the cap screw securing the front inner idler wheels to the slide rails. Account for one small washer, two spacers, four large flat washers, a lock washer, and a lock nut.

Fig. 9-308



AG687D

Fig. 9-309



AG688D

6. Remove the cap screw securing the front shock mounting bracket to the rear shock pivot. Account for an axle.

Fig. 9-310



AG689D

Fig. 9-311



AG690D

7. Remove the cap screw securing the front shock to the mounting bracket.

Fig. 9-312



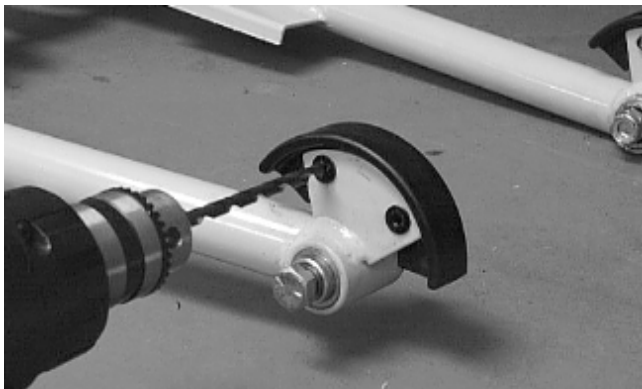
AG691D

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect all front arm weldments for cracks or unusual bends.
2. Closely inspect all tubing for cracks or unusual bends.
3. Inspect the bearings, bushings, and front arm spacers for wear or damage.
4. Inspect the two rear track guide bumpers. If worn, drill out the rivets securing the bumpers to the arm and replace with new bumpers.

Fig. 9-313



AG486D

5. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enters the shock body.
6. Inspect the shock absorber eyelet welds (at each end) for any cracks, signs of separation, or for unthreading.
7. Inspect the shock absorber for damage.

INSTALLING

1. Secure the shock eyelet to the front shock mounting bracket. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-314



AG691D

2. Secure the front shock mounting bracket and axle assembly to the rear shock pivot.

Fig. 9-315



AG690D

Fig. 9-316



AG689D

3. Slide the front idler wheel axle through the slide rail; then install a spacer, large washer, idler wheel, large washer, rear shock pivot, large washer, idler wheel, large washer, and a spacer.

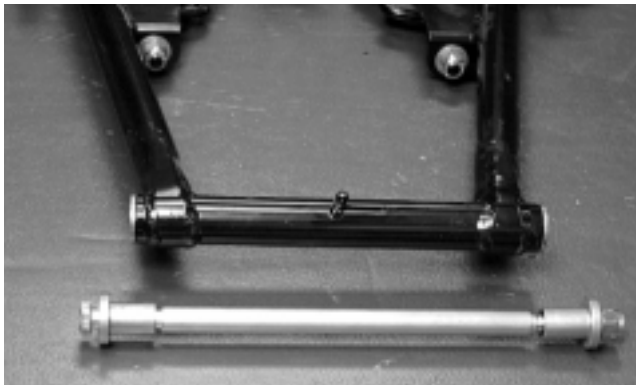
Fig. 9-317



AG688D

4. Secure the front inner idler wheel assembly with a cap screw, flat washer, lock washer, and a lock nut. Tighten to 3.2 kg-m (23 ft-lb).
5. Position the front arm with spacers, an axle tube, and serrated axles to the mounting brackets. Secure with the cap screw and lock nut. Tighten to 4.2 kg-m (30 ft-lb).

Fig. 9-318



AG685D

6. Position the upper shock eyelet and serrated axle in the front arm. Secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-319

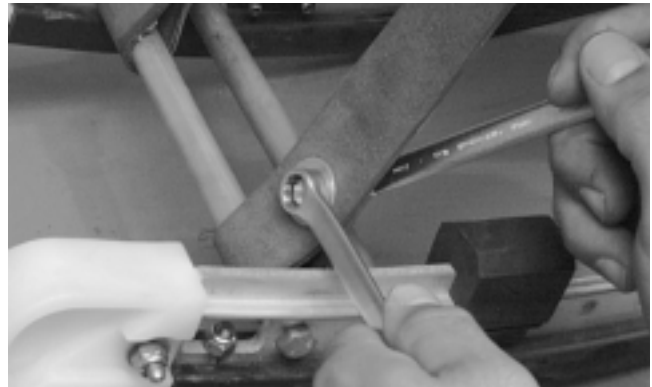


AG582D

■ **NOTE:** Do not over-tighten the shock absorber cap screw as the shock eyelet must be free to pivot.

7. Secure the limiter straps with cap screws, washers, and lock nuts. Tighten to 1.1 kg-m (8 ft-lb).

Fig. 9-320



AG632D

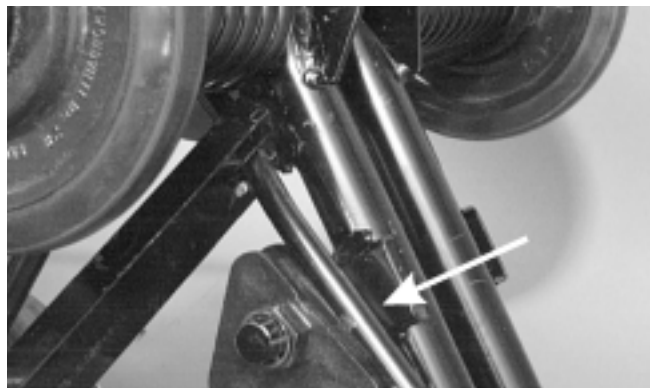
Rear Shock Absorber and Shock Links

■ **NOTE:** The skid frame must be removed for this procedure (see Removing Skid Frame in this sub-section).

DISASSEMBLING

1. Using the Rear Suspension Spring Tool (p/n 0144-311), remove the spring from the adjusting cam.

Fig. 9-321



AG624DA

WARNING

Care must be taken when removing the spring from the adjusting cam or damage or injury could result.

2. Remove the cap screw securing the lower shock eyelet and shock links. Account for shock sleeves, axle links, and a lock nut.

Fig. 9-322



AG692D

■ **NOTE:** Lay components out in order as they are removed.

3. Remove the cap screw and lock nut securing the shock absorber at the upper eyelet and remove the shock absorber. Account for a sleeve and bushings.

Fig. 9-323



AG634D

4. Mark the hole that the upper shock links are mounted in for assembly purposes; then remove the cap screw and lock nut securing the shock links to the upper arm bracket. Account for all mounting hardware.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean shock pivot and idler wheel axle in part-cleaning solvent. Dry with compressed air.

⚠ WARNING

Always wear an approved pair of safety glasses when using compressed air.

2. Clean the idler wheel bearings with a clean cloth.
3. Closely inspect the idler wheel axle for wear, bends, or damaged threads at either end.

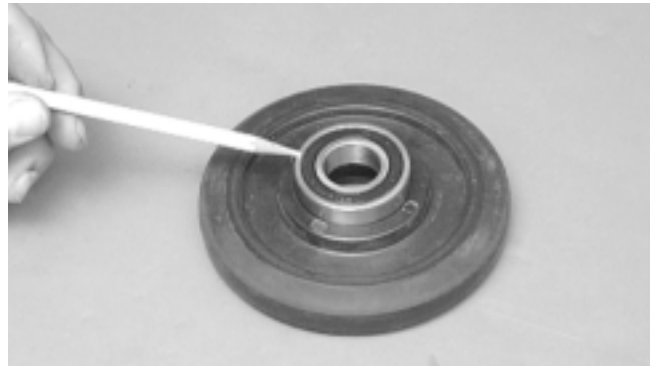
4. Inspect the idler wheels for signs of cracking, wear, or outer rubber separation from plastic wheel.
5. Rotate the idler wheel bearings (by hand) and inspect for any signs of binding or roughness.
6. If a bearing must be replaced, use this procedure.

⚠ CAUTION

Do not remove the bearing unless it is absolutely necessary. The bearing will be damaged during removal.

- A. Remove the wheel insert and the snap ring.
- B. Using a hydraulic press, press the bearing out the inside of the wheel.
- C. Press the new bearing (on its outer race) into the idler wheel.

Fig. 9-324



AG538D

- D. Install the snap ring making sure the “sharp side” is directed away from the bearing.

Fig. 9-325



AG539D

- E. Install the insert.
7. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enters the shock body.
 8. Inspect the rubber shock bushings located in the shock absorber eyelets for cracks or deterioration.

9. Inspect the shock absorber eyelet welds (at each end) for any cracks or signs of separation.
10. Inspect the welds securing the eyelets of the shock links for cracks or signs of separation. Either weld the eyelet or replace the shock link.
11. Inspect the axle surfaces for any signs of corrosion. If corrosion is found, lightly buff the surface of the axle with #400 wet-or-dry sandpaper; then apply a light coat of grease.

ASSEMBLING

1. Secure the shock eyelet to the idler arm with bushings, sleeve, lock nut, and a cap screw. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-326



AG634D

2. Secure the rear shock links and the lower shock absorber eyelet to the shock pivot bracket by placing the bushings and shock sleeve into the shock eyelet; then install the axle links into the rear shock links. Secure the assembly by installing a cap screw and thin flat washer through the shock link assembly, thick flat washer, shock pivot bracket and shock eyelet assembly, thick flat washer, shock link assembly, and a thin flat washer. Secure the assembly with a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

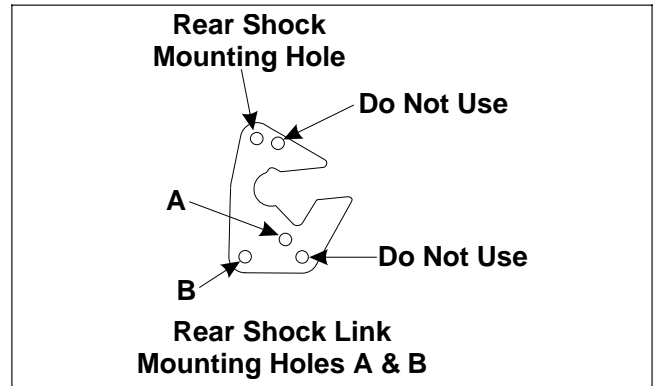
Fig. 9-327



AG692D

3. Position the shock links in the appropriate holes of the idler arm brackets (hole A). Place a spacer between the center of the brackets; then place a flat washer on the cap screw. Insert the axle links into the upper shock link eyelets; then insert the cap screw with washer through the eyelets. Secure with a cap screw, washer, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-328



732-688F

Slide Rails

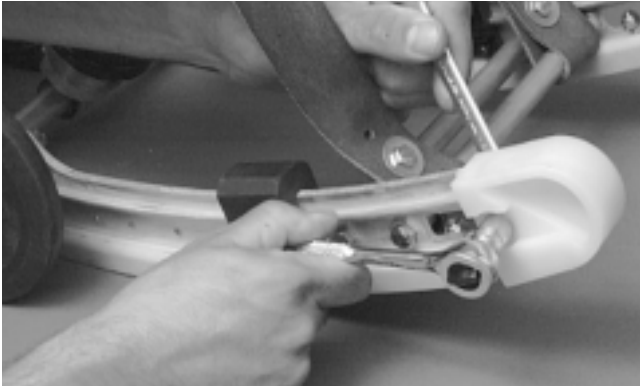
■ **NOTE:** The skid frame must be removed for this procedure.

REMOVING

■ **NOTE:** When it is necessary to replace one or both slide rails, it is recommended that one slide rail be removed at a time. The remaining slide rail will then hold the crossbraces, axles, and brackets in their correct assembly order. Always mark the mounting hole locations during disassembly to speed up the assembly process and to prevent any damage. This method is much quicker than to completely disassemble the entire skid frame. To replace either rail, use the following procedure.

1. Remove the end cap from the slide rail. Account for a cap screw, lock nut, and two flat washers.

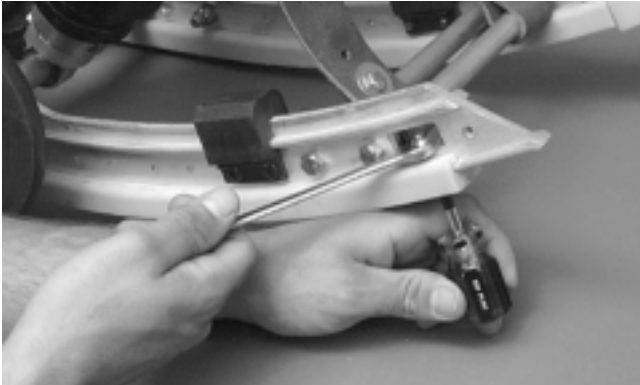
Fig. 9-329



AG506D

2. Remove the machine screw and lock nut securing the wear strip to the front of the slide rail.

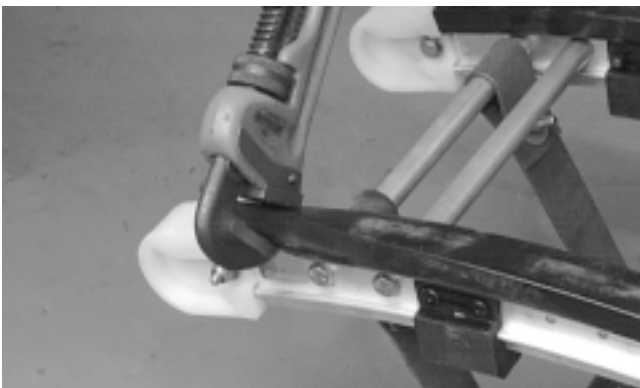
Fig. 9-330



AG509D

3. Using a pipe wrench and starting from either end, hook the edge of the wear strip with the pipe wrench jaw and twist the wear strip off the slide rail. Move the pipe wrench 7.5 cm (3 in.) and again twist the wear strip off the rail. Repeat this procedure until the wear strip is free of the rail.

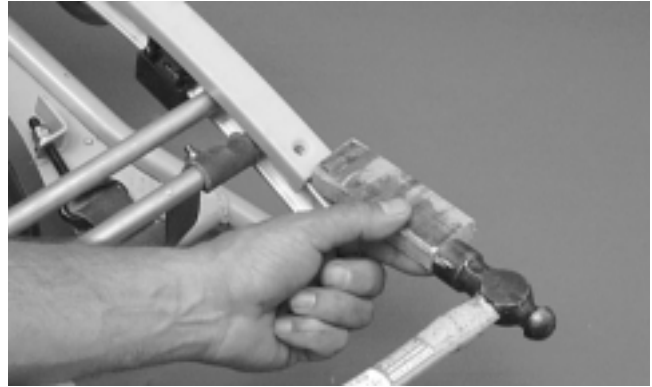
Fig. 9-331



AG617D

■ **NOTE:** The wear strip can also be driven off the slide rail; however, it is quicker to use the pipe wrench.

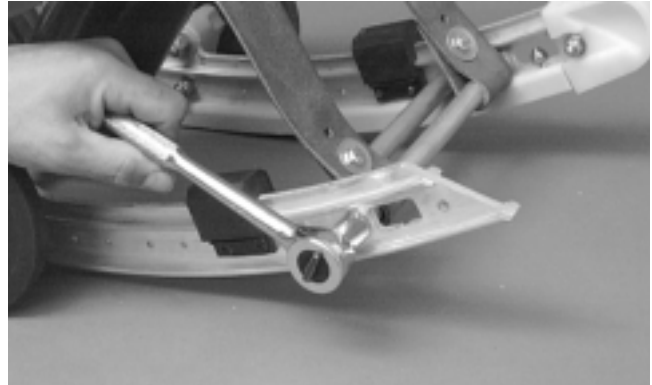
Fig. 9-332



AG510D

4. Remove the cap screws securing the crossbraces to the slide rail.

Fig. 9-333



AG511D

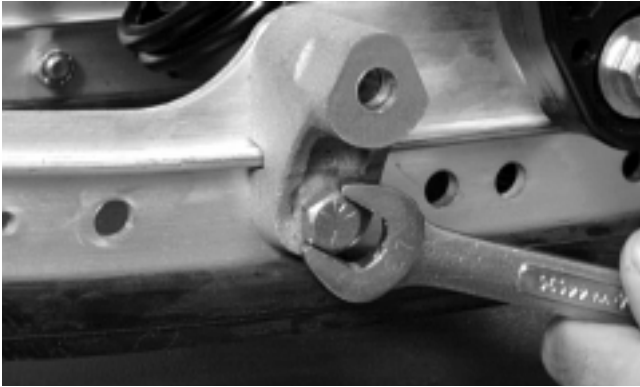
5. Remove the cap screws and lock nuts securing the front outer idler wheel and the idler wheel mounting block. Account for flat washers and an axle.

Fig. 9-334



AG678D

Fig. 9-335



AG686D

6. Remove the cap screw and lock washer securing the front inner idler wheel.

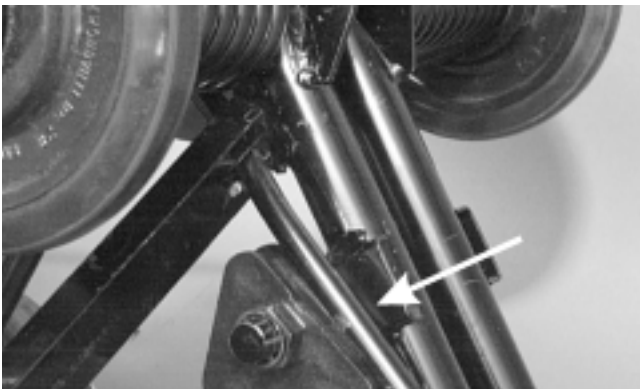
Fig. 9-336



AG687D

7. Remove the short spring leg from the adjusting cam.

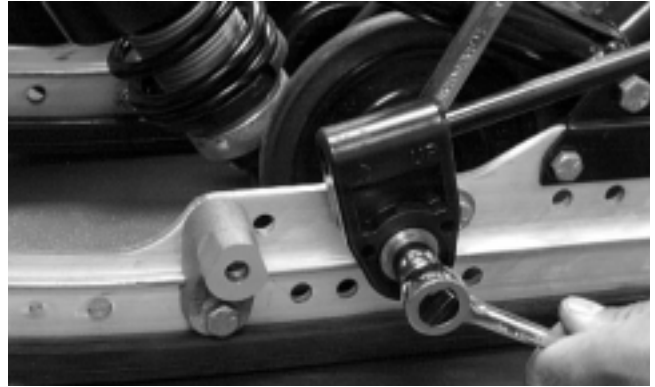
Fig. 9-337



AG624DA

8. Remove the cap screw and flat washer securing the spring slide to the rail. Account for a spacer and the slide block.

Fig. 9-338



AG679D

Fig. 9-339



AG680D

9. Mark the mounting position of the front arm mounting bracket.

Fig. 9-340



AG637D

10. Remove the cap screws securing the front arm mounting bracket. Account for lock nuts.

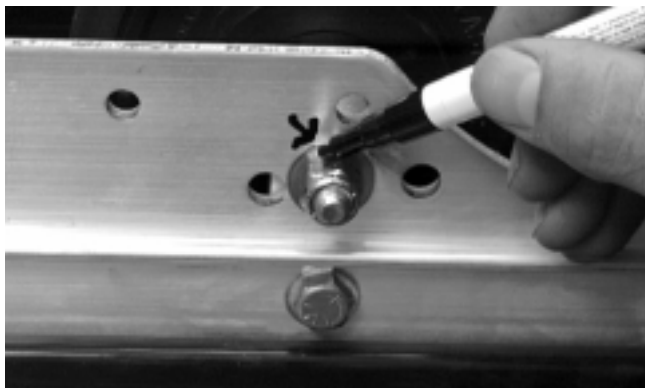
Fig. 9-341



AG638D

11. Mark the mounting position of the rear inner idler wheels.

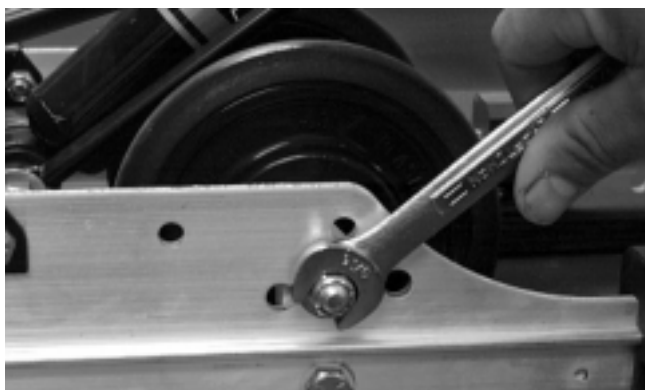
Fig. 9-342



AG693D

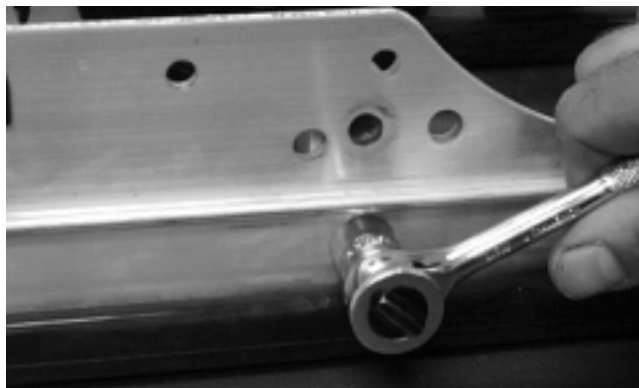
12. Remove the cap screws and lock nut securing the rear inner idler wheels and mounting block.

Fig. 9-343



AG672D

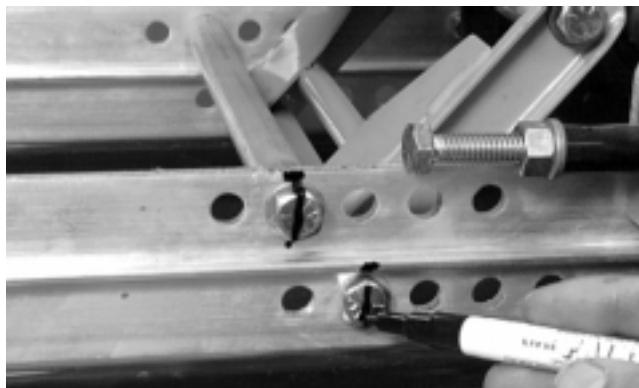
Fig. 9-344



AG673D

13. Mark the mounting position of the rear arm limiter and rear arm.

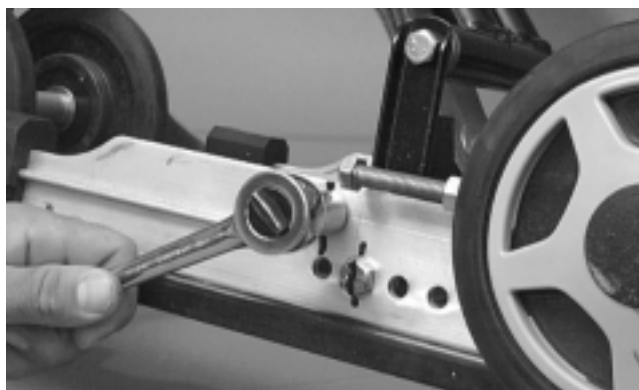
Fig. 9-345



AG683D

14. Remove the cap screw, lock washer, and lock nut from the rear arm limiter shaft.

Fig. 9-346



AG639D

15. Remove the cap screw and lock nut securing the rear arm to the rail.

Fig. 9-347



AG694D

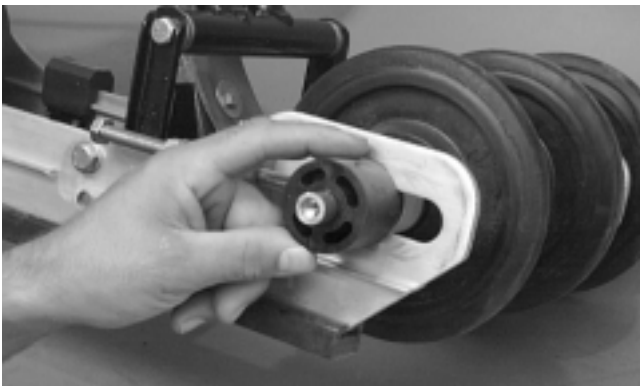
16. Remove the idler wheel insert; then remove the cap screw and flat washer securing the rear idler wheel. Remove the idler wheel; then remove the adjuster bushing.

Fig. 9-348



AG626D

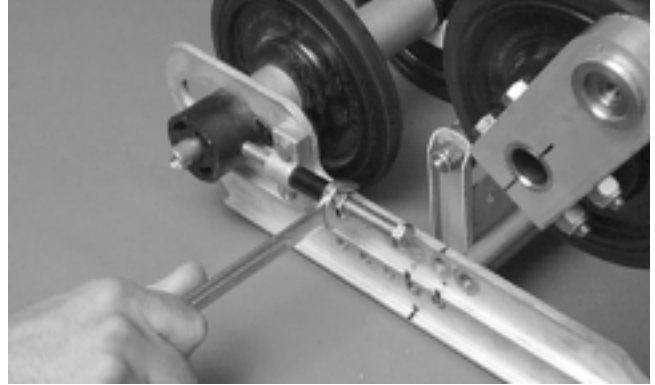
Fig. 9-349



AG628D

- **NOTE:** The adjusting bolt may have to be loosened to remove the adjuster bushing.

Fig. 9-350

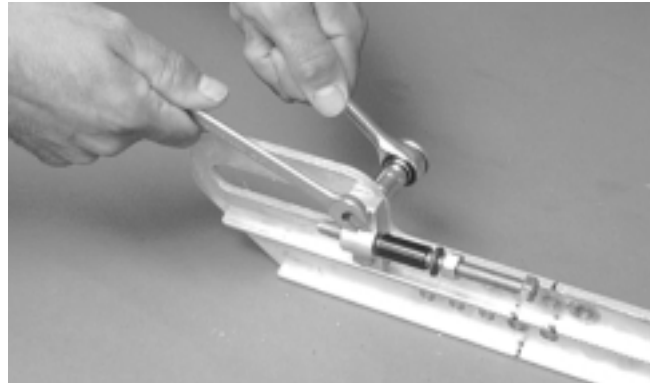


AG525D

- **NOTE:** At this point, the slide rail should be free of the skid frame components and can be removed.

17. Remove the cap screws and lock nuts securing the track adjuster bracket.

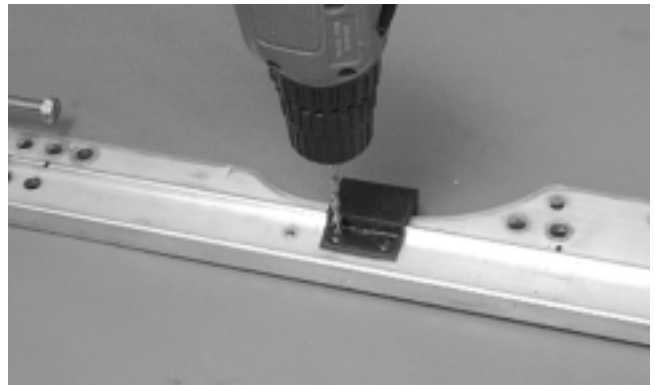
Fig. 9-351



AG527D

18. Using a drill and a 3/16-in. drill bit, drill out the rivets and remove the shock pads. Note the shock pad location for installation. Account for the retaining brackets.

Fig. 9-352



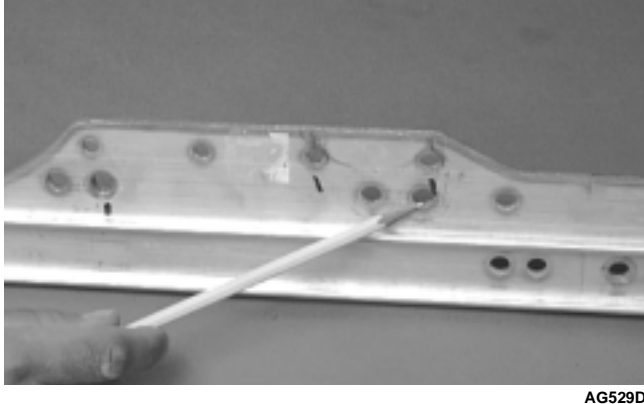
AG528D

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the slide rail for cracks or unusual bends.

Fig. 9-353



2. Inspect the wear strip for wear. The wear strip must be 10.7 mm (0.42 in.) thick or thicker. If the wear strip measurement is less than specified, replacement of both wear strips is necessary.

Fig. 9-354

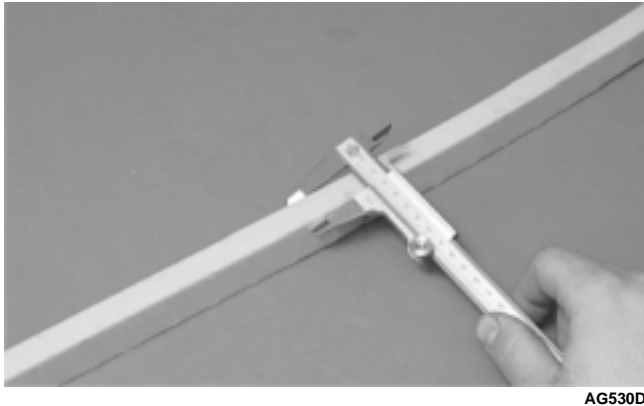
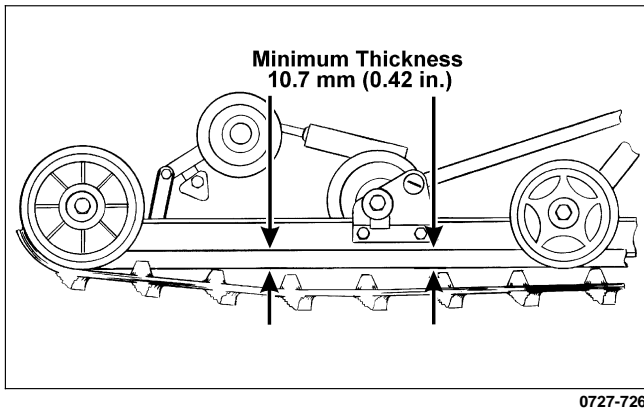


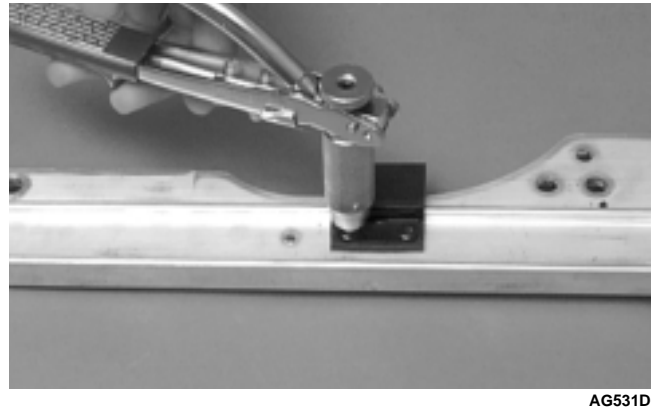
Fig. 9-355



INSTALLING

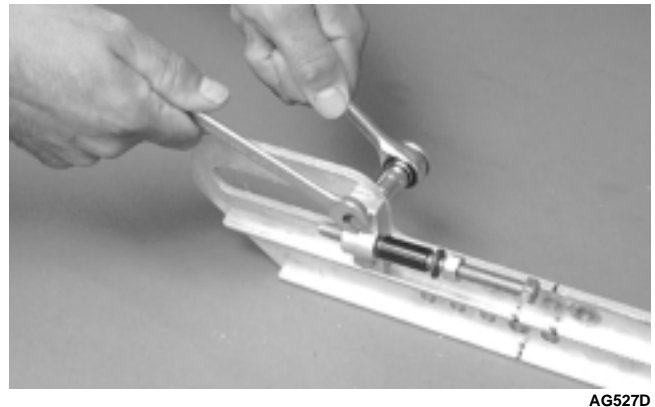
1. Install the shock pads and retaining brackets; then secure with rivets.

Fig. 9-356



2. Secure the track adjuster bracket with the cap screws and lock nuts. Tighten to 1.5 kg-m (11 ft-lb).

Fig. 9-357



3. Place the rail into position; then install the adjuster bushing and rear idler wheel. Secure with a cap screw (coated with red Loctite #271) and flat washer. Tighten to 3.2 kg-m (23 ft-lb); then install the wheel insert.

Fig. 9-358

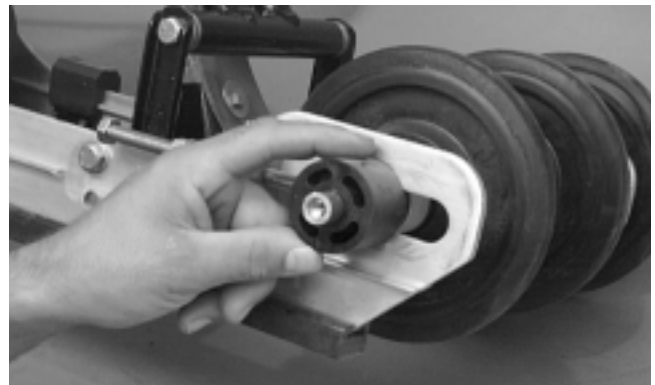


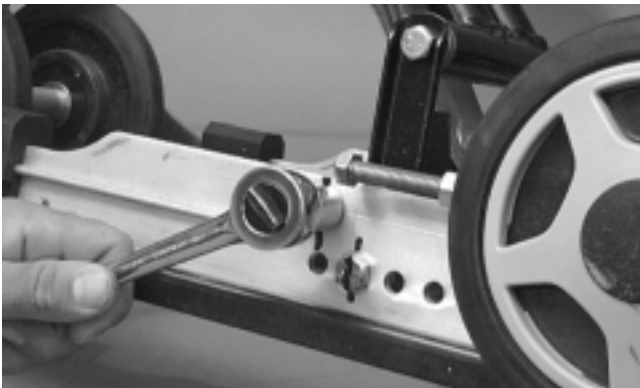
Fig. 9-359



AG626D

4. Install the rear arm limiter cap screw (coated with red Loctite #271) in the appropriate hole (as noted during disassembly) and tighten to 3.2 kg-m (23 ft-lb).

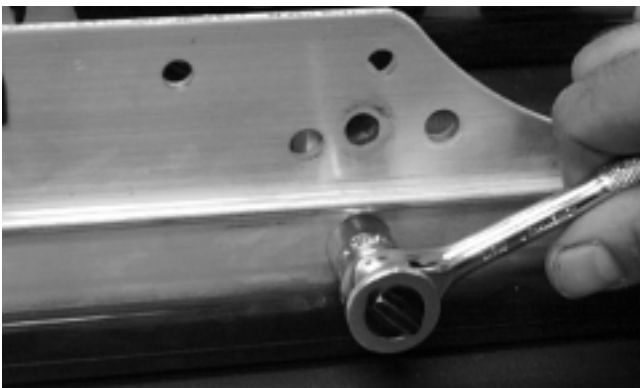
Fig. 9-360



AG639D

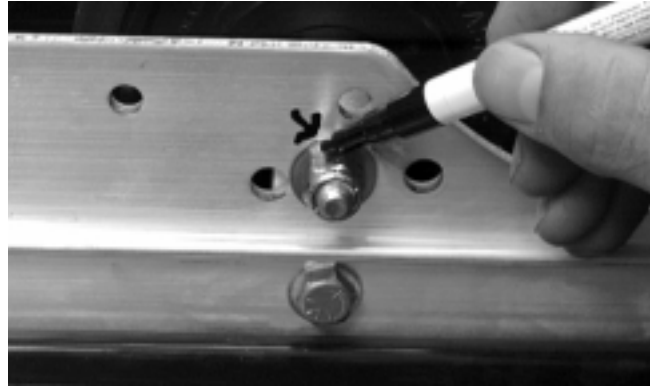
5. Install the rear inner idler wheels in the appropriate hole as noted during disassembly and secure with cap screws (coated with red Loctite #271) and lock nuts. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-361



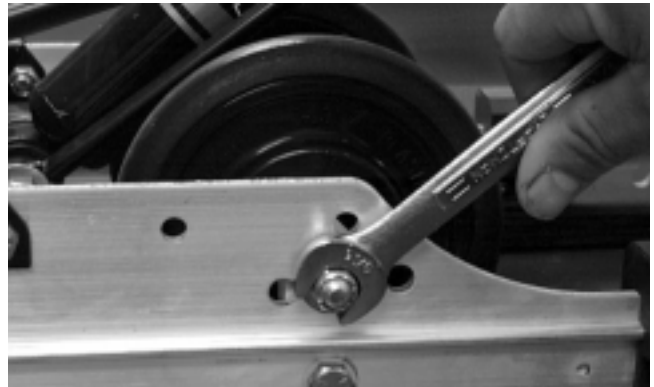
AG673D

Fig. 9-362



AG693D

Fig. 9-363



AG672D

6. Secure the front arm mounting bracket with the cap screws (coated with red Loctite #271) and lock nuts. Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-364



AG638D

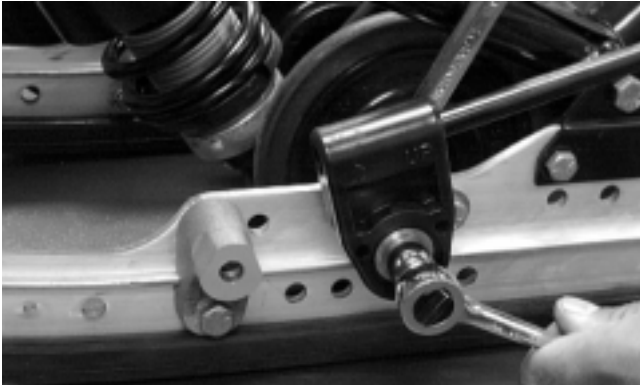
7. Place the spring into the slide blocks; then place the spring slide and slide block assembly into position on the slide rail. Secure with a cap screw (coated with red Loctite #271) and washer. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-365



AG680D

Fig. 9-366



AG679D

8. Secure the front inner idler wheel axle with a cap screw (coated with green Loctite #609) and lock washer. Tighten to 3.2 kg-m (23 ft-lb).

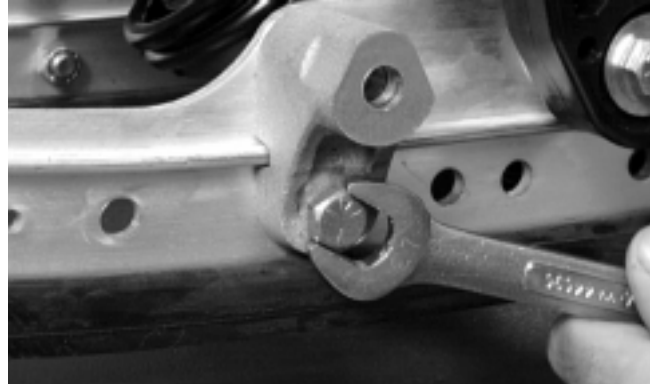
Fig. 9-367



AG687D

9. Secure the outer idler wheel mounting block with the cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-368



AG686D

10. Secure the outer idler wheel to the mounting block with a cap screw, flat washers, idler wheel, axle, and a lock nut. Tighten to 3.2 kg-m (23 ft-lb).

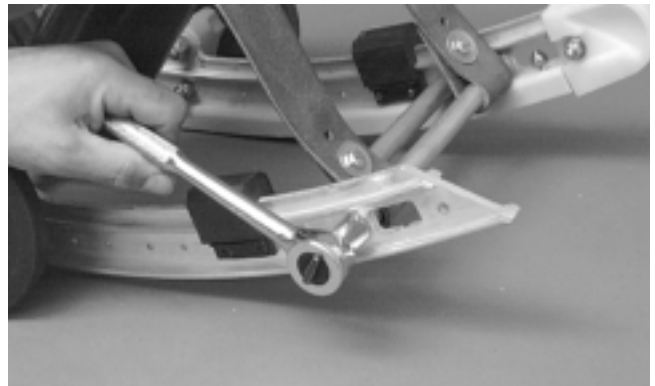
Fig. 9-369



AG678D

11. Secure the crossbraces with cap screws (coated with red Loctite #271). Tighten to 1.5 kg-m (11 ft-lb).

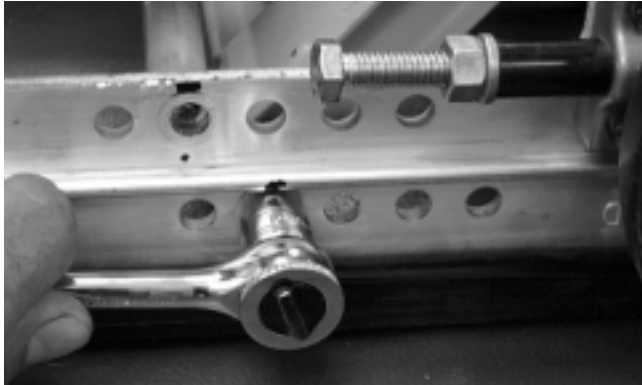
Fig. 9-370



AG511D

12. Install the rear arm in the appropriate hole as noted during disassembly; then secure with a cap screw (coated with red Loctite #271) and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-371



AG694D

■ **NOTE:** Apply a light coat of grease to the slide rail surface to aid in installing a new wear strip. If there are any sharp edges on the lower portion of the rail, use a file to remove them.

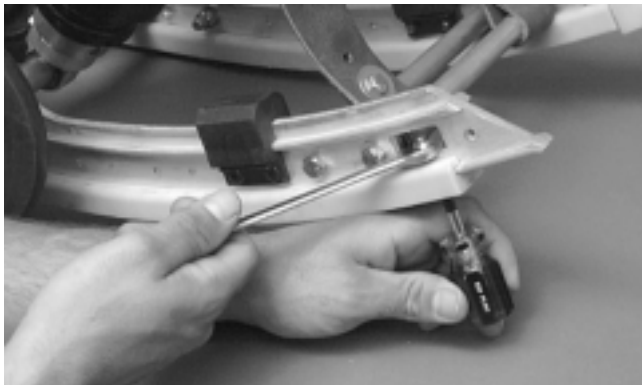
Fig. 9-372



AG534D

13. From the back, start the wear strip onto the rail; then using a block of wood and a hammer, drive the wear strip forward into position. Secure with a machine screw and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

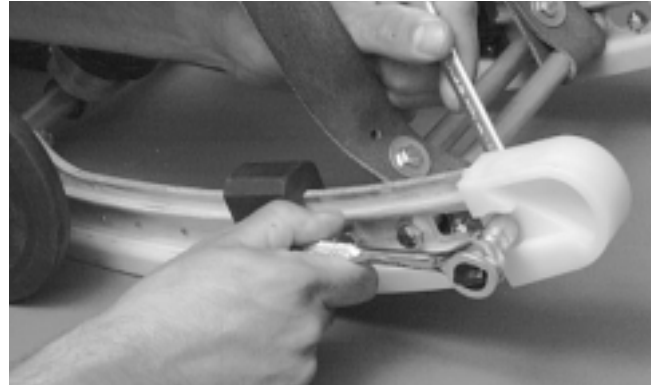
Fig. 9-373



AG509D

14. Secure the end cap onto the slide rail using a cap screw, flat washers, and a lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Fig. 9-374



AG506D

15. Install the short spring leg onto the adjusting cam.

Fig. 9-375



AG516DA

16. Adjust suspension.
17. After the skid frame has been installed, adjust track tension deflection (see Track Tension in this sub-section) and track alignment (see Track Alignment in this sub-section).

Installing Skid Frame

1. Place a piece of cardboard on the floor to protect against scratching and tip the snowmobile onto one side.
2. Pull the track away from the tunnel and spread open; then place the skid frame into the track.
3. Position the front of the skid frame into the tunnel and align the front arm with the appropriate mounting hole in the tunnel. Insert the cap screw with washers through the tunnel mounting hole and through the front arm. **DO NOT TIGHTEN AT THIS TIME.** Repeat this procedure on the other side.

■ **NOTE:** To aid in centering the front arm with the hole in the tunnel, position the skid frame and track at a 45° angle to the bottom of the tunnel.

- Elevate the rear of the skid frame and the track into position in the tunnel.
- Align the offset pivot idler arm assembly with the appropriate hole in the tunnel. Secure the offset pivot idler arm assembly with a cap screw (coated with red Loctite #271), lock washer, and flat washer. **DO NOT TIGHTEN AT THIS TIME.**

■ **NOTE:** Do not install the short legs of the rear springs onto the adjusting cams at this time.

- At this time, tighten all four skid frame mounting cap screws to 3.2 kg-m (23 ft-lb).
- Using the Rear Suspension Spring Tool (p/n 0144-311), install the short legs of the rear springs onto the adjusting cams making sure the cams are in the same adjustment positions.
- Tighten the two track tension adjusting bolt evenly until track deflection is within specifications; then lock the jam nuts to secure the adjustment.
- Check track tension deflection and alignment; adjust if necessary (see Track Tension and Track Alignment in this sub-section).

Track Tension

⚠ WARNING

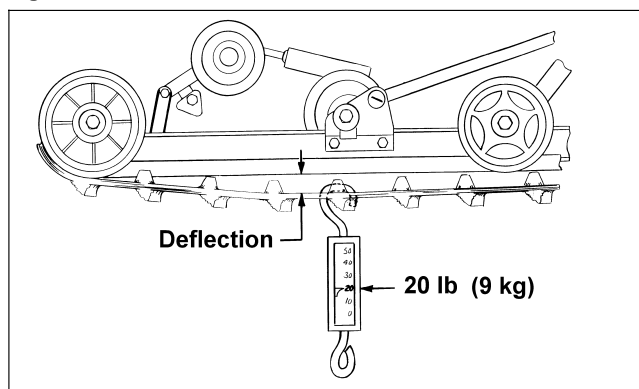
Deactivate all switches.

CHECKING DEFLECTION

- Tip the snowmobile on its side.
- Hook a spring scale around a track clip at mid-span; then pull the track down with the scale to 9 kg (20 lb) and measure the distance between the bottom of the wear strip and the inside surface of the track. Track deflection must be within specifications.

Rear Suspension Style	Setup Tension	After Break-In Tension
FasTrack w/o Torque Sensing Link	19-25 mm (3/4-1 in.)	25-32 mm (1-1 1/4 in.)
FasTrack w/Torque Sensing Link (121 in. Track)	32-38 mm 1 1/4-1 1/2 in.)	38-44 mm (1 1/2-1 3/4 in.)
FasTrack w/Torque Sensing Link (136 in. Track)	38-44 mm (1 1/2-1 3/4 in.)	50.8-57.2 mm (2-2 1/4 in.)

Fig. 9-376



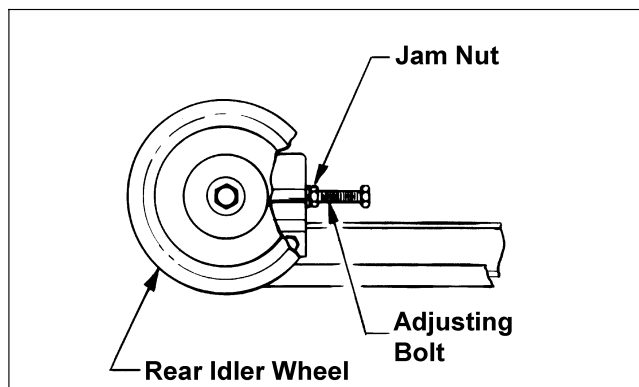
729-429A

■ **NOTE:** If the track is new, it will stretch slightly and take a “set” within the first 300 to 500 miles of operation.

ADJUSTING DEFLECTION

- Place the snowmobile up on a shielded safety stand. Check to make sure the track is 2-3 in. off the floor.
- If the measurement is not as specified, loosen the jam nuts of the adjusting bolts.

Fig. 9-377



0727-456

- If the measurement obtained in step 2 is more than specified, tighten the adjusting bolts. If the measurement obtained is less than specified, loosen the adjusting bolts. When the measurement is within specification range, lock the adjustment by bottoming the jam nuts against the axle housings.

■ **NOTE:** Vigorously push the underside of the track up and down. Track must not hit the top of the tunnel or slap the skid frame.

4. After correct track tension is obtained, check track alignment (see Track Alignment in this sub-section).

■ **NOTE:** Track tension and track alignment are interrelated; always check both even if only one adjustment seems necessary. Always establish correct track tension before checking and/or adjusting alignment.

Track Alignment

■ **NOTE:** Proper track alignment is when the rear idler wheels are equidistant from the inner drive lugs on the inside surface of the track.

CHECKING

1. Using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.

WARNING

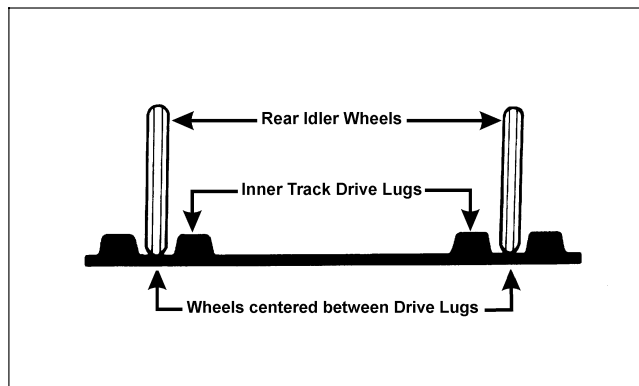
The tips of the skis must be positioned against a wall or similar object for safety. Keep hands, feet, and clothing away from moving components.

2. Start the engine and accelerate slightly. Use only enough throttle to rotate the track several revolutions. SHUT THE ENGINE OFF.

■ **NOTE:** Allow the track to coast to a stop. Do not apply the brake because it could produce inaccurate alignment conditions.

3. When the track stops rotating, check the relationship of the rear idler wheels and the inner track drive lugs. If the distance from the idler wheels to the inner drive lugs is the same on both sides, no adjustment is necessary.

Fig. 9-378



725-070A

4. On the side of the track, which has the inner drive lugs closer to the rear idler wheel, loosen the adjusting bolt jam nut; then rotate the adjusting bolt clockwise 1-1 1/2 turns.
5. Continue to check the track alignment and make the necessary adjustments until proper alignment is obtained.
6. After proper track alignment is obtained, lock the jam nut against the axle housing.

■ **NOTE:** Make sure correct track tension is maintained after adjusting track alignment.

■ **NOTE:** Field test the track under actual conditions and after the field test, check track alignment and track tension; adjust as necessary.

Repair Procedure 3 - Track/Rear Suspension

This Track/Rear Suspension sub-section (Repair Procedure 3) has been organized so each procedure can be completed individually and efficiently. Each sub-section has (as necessary) Removing, Disassembling, Cleaning and Inspecting, Assembling, and Installing procedures.

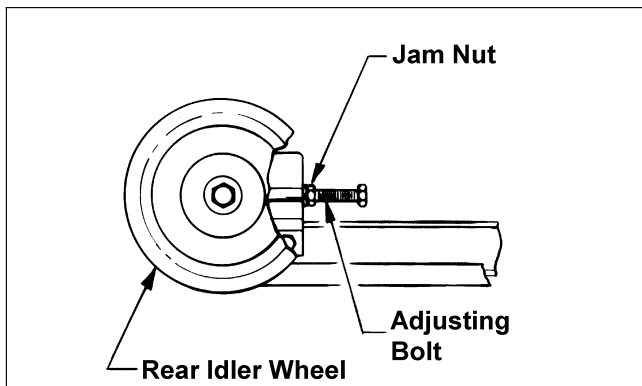
■ **NOTE:** Some photographs used in this sub-section are used for clarity purposes only and are not designed to depict actual conditions.

Removing Skid Frame

■ **NOTE:** Many service procedures can be performed without removing the skid frame. Closely observe the note introducing each subsequent sub-section for this important information.

1. Loosen the jam nuts and the two track tension adjusting bolts.

Fig. 9-379



2. Place a support stand under the rear bumper; then remove the four cap screws securing the skid frame to the tunnel.

■ **NOTE:** The support stand should hold the snowmobile level and not raised off the floor.

3. Remove the support stand; then tip the snowmobile onto one side using a piece of cardboard to protect against scratching. Remove the skid frame.

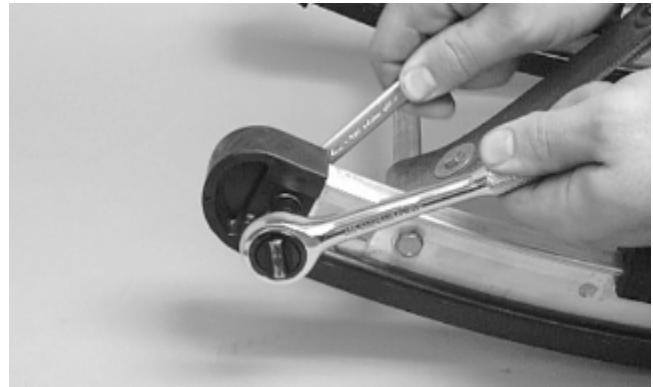
End Cap

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the lock nut, washer, and cap screw securing the end cap.

Fig. 9-380



AG297D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the end cap area of the slide rail for cracks and wear.
2. Inspect the end cap for any signs of cracking or wear.
3. Clean both the slide rail area and the end cap. Using compressed air, clean the areas of dirt and gravel.

⚠ WARNING

Always wear safety glasses when using compressed air.

4. Inspect the cap screw for cracked, stretched, or damaged threads. Use a new lock nut when assembling.

INSTALLING

1. Position the end cap on the slide rail; then align the hole in the end cap with the hole in the slide rail.
2. Secure with a cap screw and new lock nut. Tighten to 1.1 kg-m (8 ft-lb).

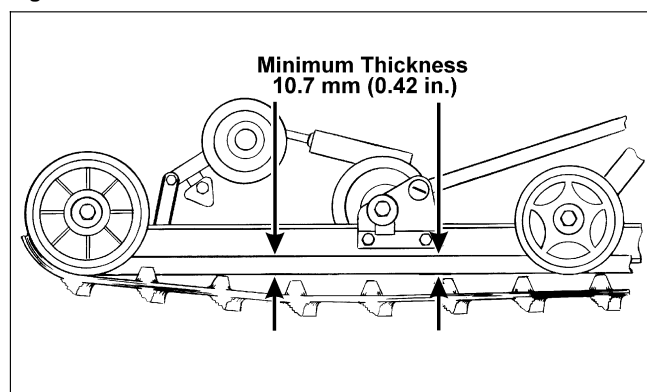
Wear Strip

■ **NOTE:** The skid frame should be removed for this procedure.

REMOVING

■ **NOTE:** Prior to removing the wear strips, inspect each wear strip for wear. The wear strip must be 10.7 mm (0.42 in.) thick or thicker. If the wear strip measurement is less than specified, replacement of both wear strips is necessary.

Fig. 9-381



0727-726

■ **NOTE:** It is possible to remove and install a wear strip without removing the skid frame. To do this, remove the machine screw and lock nut securing the wear strip at the front of the slide rail; then align the wear strip with openings (windows) in the track and drive it rearward off the slide rail. Apply low-temperature grease to the new wear strip and slide rail; then align the wear strip with openings (windows) in the track and drive it forward onto the slide rail. Secure with the machine screw and lock nut tightened to 1.1 kg-m (8 ft-lb).

1. Remove the machine screw and lock nut securing the wear strip to the front of the slide rail.

Fig. 9-382



AG298D

2. Using a pipe wrench and starting from either end, hook the edge of the wear strip with the pipe wrench jaw and twist the wear strip off the slide rail. Move the pipe wrench 7.5 cm (3 in.) and again twist the wear strip off the rail. Repeat this procedure until the wear strip is free of the rail.

Fig. 9-383



AG299

■ **NOTE:** The wear strip can also be driven off the slide rail; however, it is quicker to use a pipe wrench.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the slide rail using parts-cleaning solvent and compressed air.

⚠ WARNING

Always wear safety glasses while using compressed air.

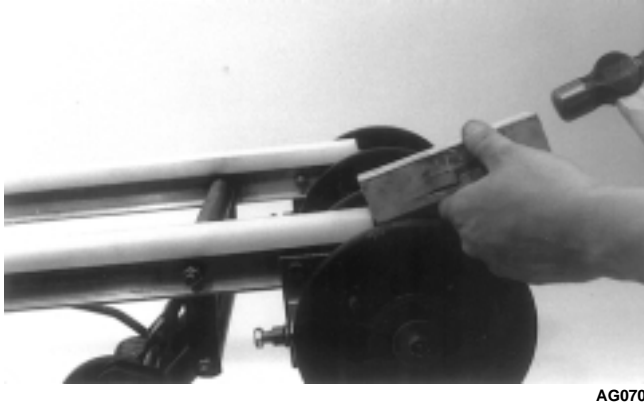
2. Inspect the slide rail for cracks. If any cracks are found, replace the slide rail.
3. Using a straightedge, inspect the slide rail for any unusual bends. Place the straightedge along the bottom surface of the slide rail. If the rail is found to be bent, it must be replaced.
4. Place the straightedge along the side of the slide rail. If rail is found to be bent, it must be replaced.

INSTALLING

■ **NOTE:** Apply a light coat of grease to the slide rail surface to aid in installing new wear strips.

1. Starting from the back, start the wear strip onto the rail; then using a block of wood and a hammer, drive the wear strip forward into position.

Fig. 9-384



AG070

2. Secure with a machine screw (coated with red Loctite #271) and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Rear Spring

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the set screw from the lock collar securing the upper idler wheel to the rear arm; then remove the lock collar and idler wheel.

Fig. 9-385



AG307D

■ **NOTE:** It may be necessary to use the Idler Wheel Puller Kit (p/n 0644-122).

2. Slide the spring and the plastic sleeve off the rear arm.

Fig. 9-386



AG308D

3. Repeat steps 1 - 2 for the other rear spring.

INSPECTING

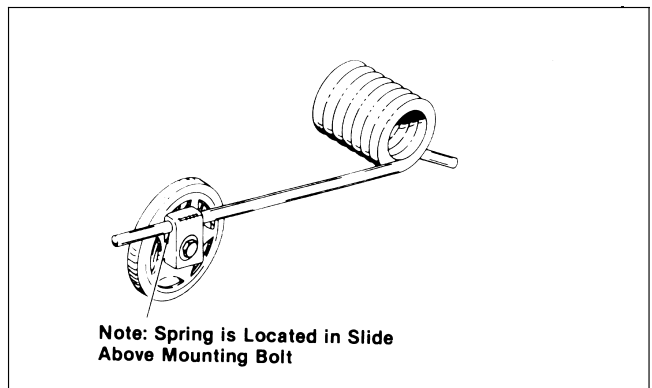
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the spring slide, washers, and shaft area for wear.
2. Inspect the spring adjusting cams (spring adjuster blocks) for cracks.

ASSEMBLING

1. Slide the spring and plastic sleeve onto the rear arm.
2. Position the long spring leg into the spring slide. Make sure the spring is located above the spring slide mounting bolt.

Fig. 9-387



0727-896

3. Install the idler wheel with the snap ring facing inward on the rear arm and secure with a lock collar and set screw.
4. Repeat steps 1-3 for the other rear spring.

■ **NOTE:** When installing the opposite side spring, make sure the adjusting cam (spring adjuster block) is set in the same position.

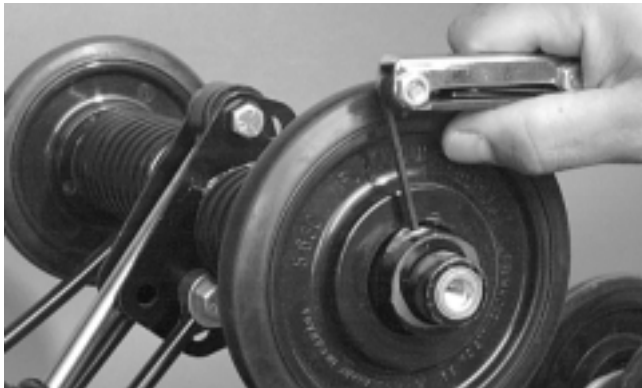
Rear Arm

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the set screw from the lock collar securing the upper idler wheel to the rear arm; then remove lock collar and idler wheel.

Fig. 9-388



AG625D

■ **NOTE:** If an idler wheel is tight on the rear arm, use the Idler Wheel Puller Kit (p/n 0644-122) to remove the idler wheel.

2. Remove the cap screw and lock nut securing the upper shock eyelet to the rear arm.

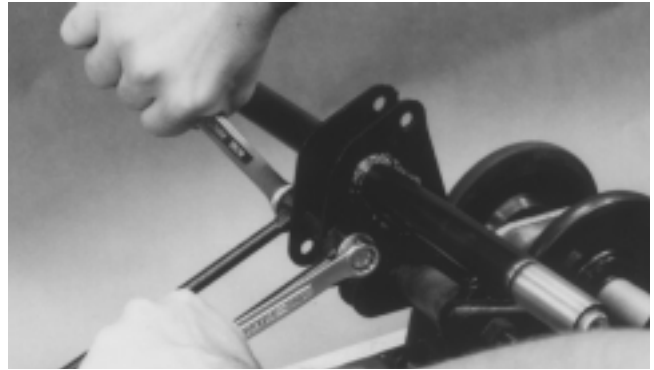
Fig. 9-389



AG309

3. Remove the cap screw and lock nut securing the upper shock link to the rear arm.

Fig. 9-390



AG310

4. Remove the cap screw and large flat washer securing the center pivot idler wheels; then remove the wheels.

Fig. 9-391



AG600

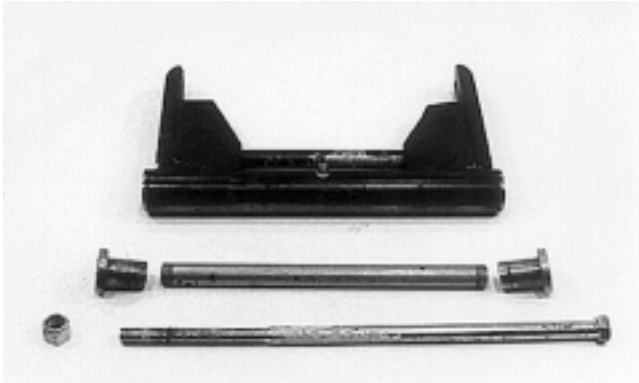
5. Remove the lock nut and cap screw securing the rear arm at its center pivot point. Account for two axles and a center tube.
6. Remove the lock nut, washer, and cap screw securing the limiter strap to the rear arm. Remove the limiter strap.
7. Remove the lock nut and cap screw securing the lower arm to the slide rails. Twist the arm forward and from between the slide rails.

Fig. 9-392



AG083

Fig. 9-393



AG084

CLEANING AND INSPECTING

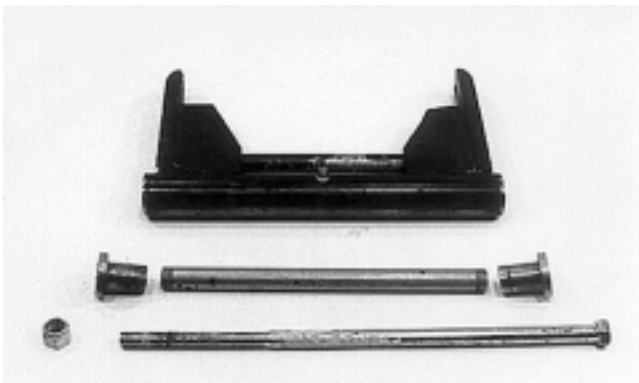
NOTE: Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the bearings with a clean cloth.
2. Inspect each idler wheel and plastic hub for cracks or damage.
3. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.
4. Inspect the bushings (located in the arm pivot area) for wear or damage.
5. Inspect all welds and the tubing of the upper arm for cracks or unusual bends.
6. Inspect the two adjusting cams (spring adjuster blocks) for damage.

ASSEMBLING

1. Apply grease to the bushings and axles; then place the axle tube and the two axles into position in the lower arm.

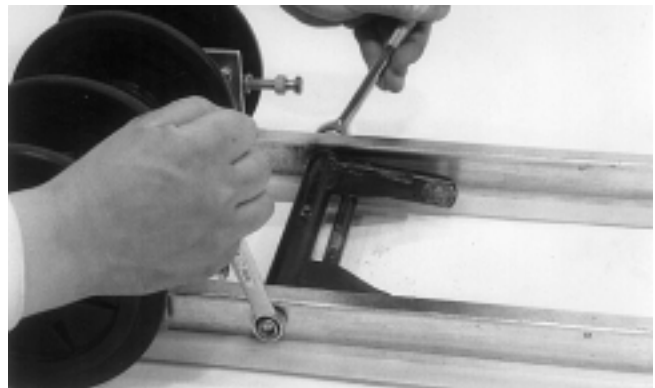
Fig. 9-394



AG084

2. Place the lower rear arm into position between the slide rails; then secure with a cap screw (coated with red Loctite #271) and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-395



AG083

3. Place the center pivot idler wheels into position and secure each with a large flat washer and cap screw. Tighten to 3.2 kg-m (23 ft-lb).

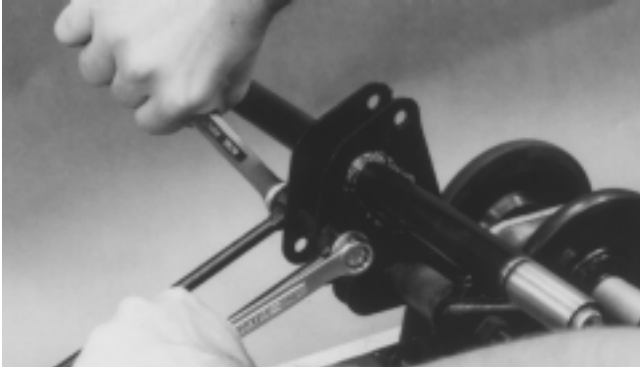
Fig. 9-396



AG600

4. Position the upper arm with axles into the lower arm; then secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).
5. Place the limiter strap into position around the upper and lower arm tubes and secure with cap screw, washers, and lock nut. Tighten to 1.1 kg-m (8 ft-lb).
6. Position the shock links into the upper hole of the rear arm bracket. Place a spacer between the center of the brackets and push the cap screw through the shock link, spacer, bracket, and remaining shock link. Secure with a washer and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-397



AG310

7. Place the shock eyelet between the upper idler arm brackets and secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

■ **NOTE:** Do not over-tighten the shock cap screws as the shock eyelets must be free to pivot.

8. Grease the pivot tubes of the upper and lower arms.

Front Arm

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the cap screw securing the upper shock absorber eyelet to the front arm. Pull the shock eyelet free of the bracket.

Fig. 9-398



AG303

2. Remove the upper cap screw, washer, and lock nut securing each limiter strap to the front arm.

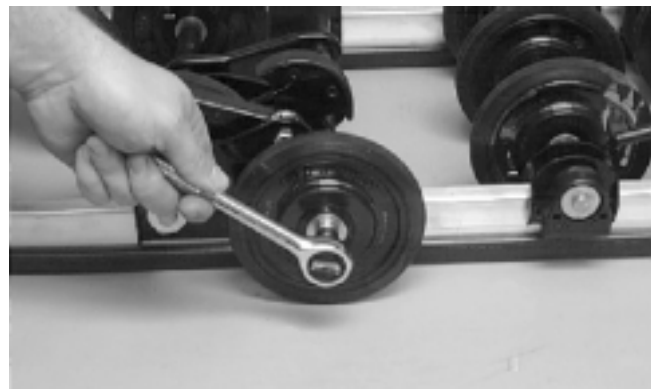
Fig. 9-399



AG300

3. Remove the cap screws and washers securing the outer idler wheels; then slide the idler wheels from the shaft.

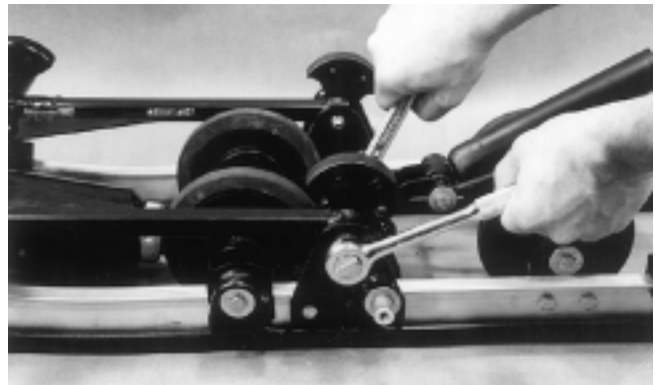
Fig. 9-400



AG322D

4. Remove the two cap screws and lock nuts securing the front arm to the slide rail brackets.

Fig. 9-401



AG304

5. Remove the front arm and account for the axles.

INSPECTING

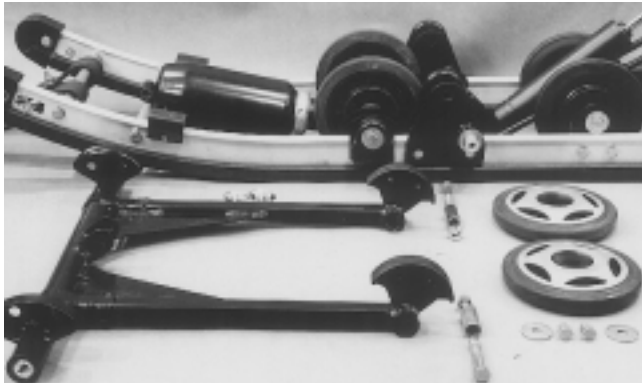
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect all front arm weldments for cracks or unusual bends.
2. Inspect all tubing (square and round) for cracks or unusual bends.
3. Inspect the bushings and axles for wear or damage.
4. Inspect the track bumpers (upper and lower). If worn, drill out the rivets securing the bumpers to the arm and replace with new bumpers.

ASSEMBLING

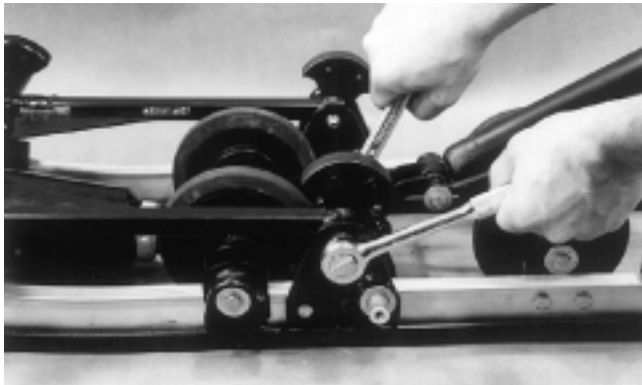
1. Apply a light coat of grease to the axles and bushing areas. Position the front arm into the mounting brackets (upper holes) and secure with two cap screws and lock nuts. Position the lock nuts to the inside of the brackets. Tighten to 4.2 kg-m (30 ft-lb).

Fig. 9-402



AG305

Fig. 9-403



AG304

2. Wrap the limiter straps around the front arm and align the holes. Secure each strap with a cap screw, washers (one on each side of the strap), and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

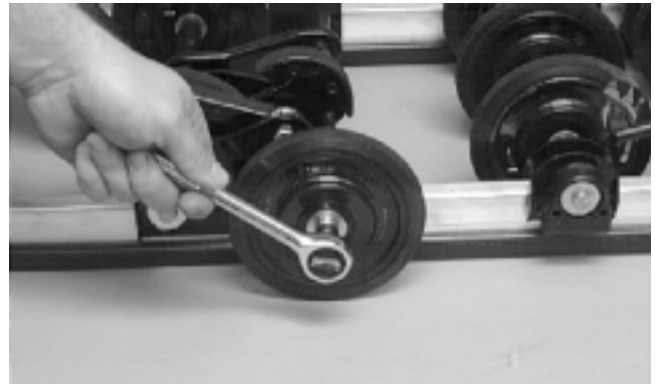
Fig. 9-404



AG300

3. Install the outer idler wheels on the idler wheel shaft and secure with flat washers and cap screws (coated with red Loctite #271). Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-405



AG322D

4. Position the shock eyelet with bushing into the bracket and secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-406



AG303

■ **NOTE:** Do not over-tighten the shock cap screws as the shock eyelets must be free to pivot.

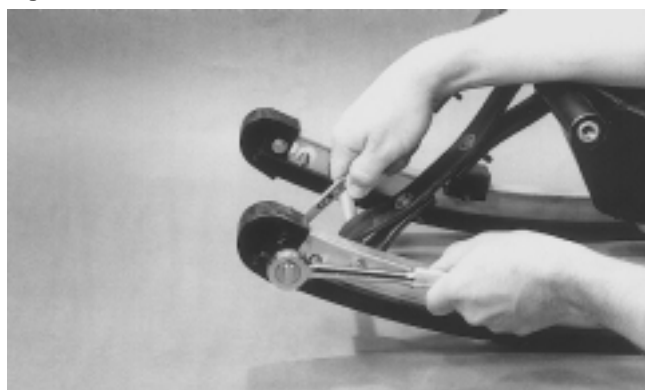
Front Idler Wheels and Bracket, Front Shock Bracket, and Front Arm Bracket

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the lock nut, washer, and cap screw securing the end cap; then remove the end cap.

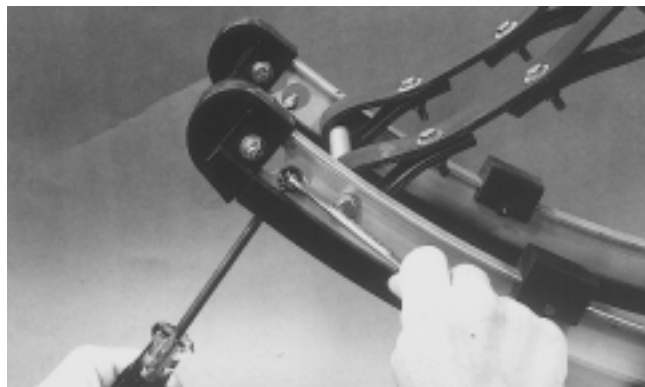
Fig. 9-407



AG297

2. Remove the lock nut securing the wear strip to the slide rail.

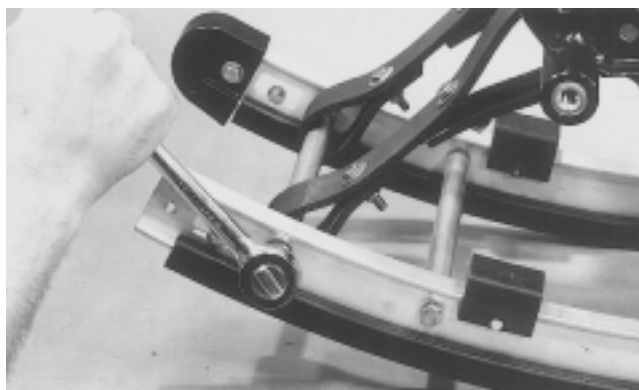
Fig. 9-408



AG298

3. Remove the four cap screws securing both front crossbraces; then remove the crossbraces.

Fig. 9-409



AG301

4. Remove the push nut and pin securing the rubber shock pad and remove the pad.
5. Remove the cap screws and flat washers securing the front idler wheels to the front arm bracket.
6. Remove the cap screw and lock nut securing the lower shock eyelet to the front shock bracket. Swing the shock forward and out of the bracket. Account for a bushing.

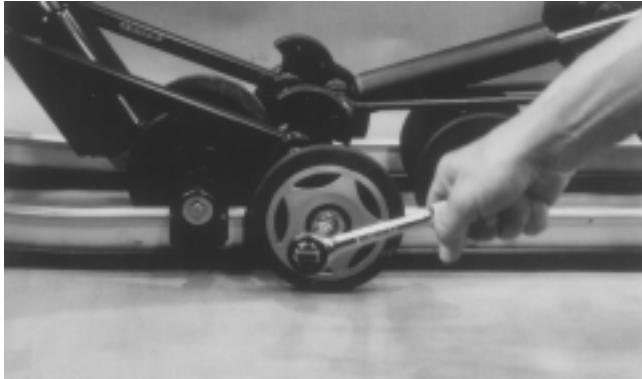
Fig. 9-410



AG317

7. Slide the idler wheel axle out of the front arm brackets and idler wheels; then remove the idler wheels. Account for spacers.
8. Remove the cap screw and flat washer securing the outer idler wheel. Remove the outer idler wheel and account for two spacer washers.

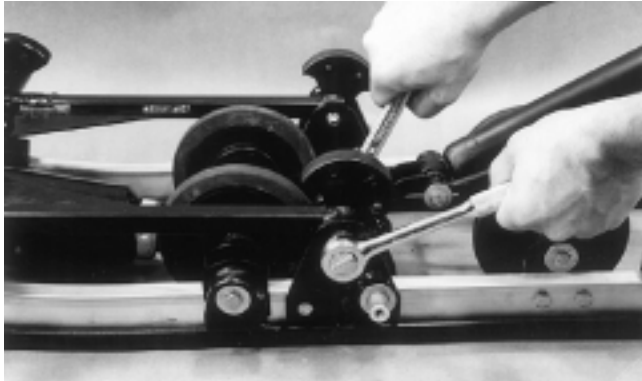
Fig. 9-411



AG321

9. Slide the inner axles out of the front arm brackets; then remove the front shock bracket.
10. Remove the cap screw and lock nut securing the front arm to the front arm bracket.

Fig. 9-412



AG304

11. Remove the cap screws and lock nuts securing the front arm bracket to the slide rail; then slide the front arm bracket forward off the slide rail.

INSPECTING

■ **NOTE: Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.**

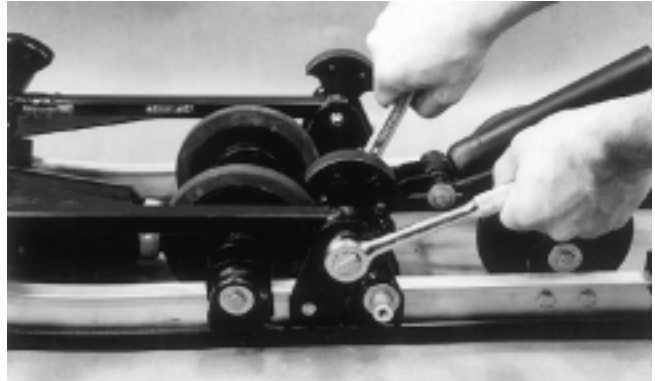
1. Inspect all weldments for cracks or unusual bends.
2. Inspect all tubing (square and round) for cracks or unusual bends.
3. Inspect the bushings and axles for wear or damage.
4. Inspect the track bumpers (upper and lower). If worn, remove the rivets securing the bumpers to the arm and replace with new bumpers.

ASSEMBLING

1. Slide the front arm bracket on the slide rail. Install the cap screws (coated with red Loctite #271) and lock nuts. Tighten to 2.4 kg-m (17 ft-lb).

2. Position the front arm into the front arm bracket. Install the cap screw and lock nut. Tighten to 4.2 kg-m (30 ft-lb).

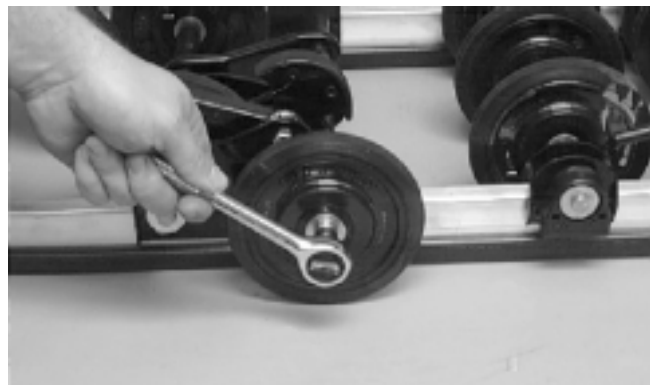
Fig. 9-413



AG304

3. Align the front shock bracket between the front arm brackets; then slide the inner axle through the brackets. Install the spacers and outer idler wheels on the inner axle and secure with flat washer and cap screw (coated with red Loctite #271). Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-414



AG322D

4. Place the front idler wheels and spacers into position and slide the idler wheel axle through the idler wheels and front shock bracket.
5. Secure the front idler wheels to the front arm bracket with flat washers and cap screws. Tighten to 3.2 kg-m (23 ft-lb).
6. Install the bushing into the lower shock eyelet and place the lower shock eyelet into the front shock bracket. Install the cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

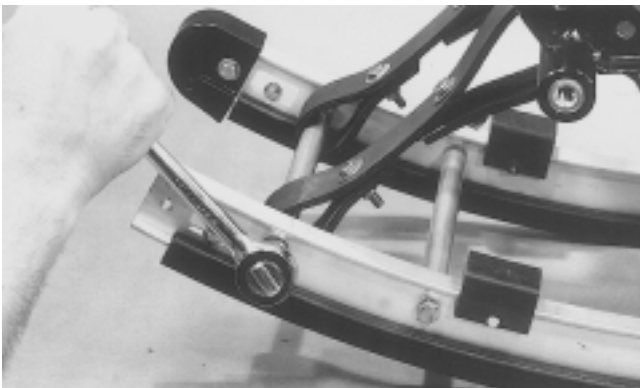
Fig. 9-415



AG317

7. Install the rubber shock pad on the slide rail and secure with push pin and a new push nut.
8. Place both front crossbraces between the slide rails and secure with four cap screws (coated with red Loctite #271). Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-416



AG301

■ **NOTE:** Be sure to place the forward crossbrace through the limiter straps.

9. Install the lock nut (threads coated with red Loctite #271) securing the wear strip to the slide rail. Tighten to 1.1 kg-m (8 ft-lb).

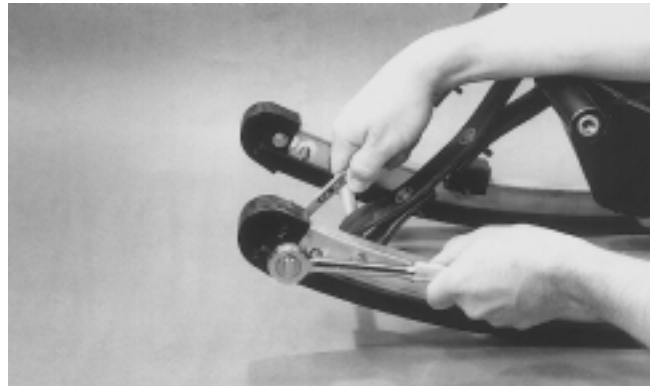
Fig. 9-417



AG298D

10. Place the end cap onto the rail and secure with cap screw, washers, and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Fig. 9-418



AG297

Front Arm Shock Absorber

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the cap screw and lock nut securing the upper shock absorber eyelet to the front arm. Account for a bushing.

Fig. 9-419



AG306

2. Remove the cap screw and lock nut securing the lower shock eyelet to the front shock bracket. Remove the shock absorber and account for a bushing.

Fig. 9-420



AG317

3. Slide the rubber shock boot off the shock absorber.

INSPECTING

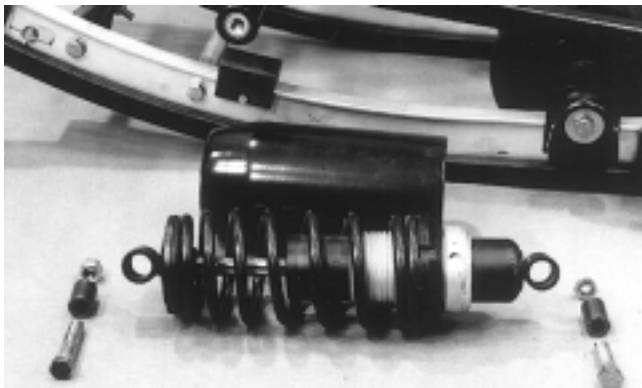
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enters the shock body.
2. Inspect the shock absorber eyelet welds (at each end) for any cracks or signs of separation.

ASSEMBLING

1. Apply a light coat of grease to both bushings and install the bushings into the shock absorber eyelets.

Fig. 9-421



AG318

2. Position the lower shock absorber eyelet into the crossbrace bracket and secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).
3. Position the upper shock absorber eyelet into the front arm bracket and secure with a cap screw (coated with red Loctite #271) and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

■ **NOTE:** Do not over-tighten the shock cap screws as the shock eyelets must be free to pivot.

Rear Arm Shock Absorber And Shock Links

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the cap screw and lock nut securing the lower shock absorber eyelet and shock links to the pivot tube bracket. Account for the two shock link axles.

Fig. 9-422



AG314

2. Remove the cap screw and lock nut securing the upper shock absorber eyelet to the rear arm bracket. Remove the shock absorber.

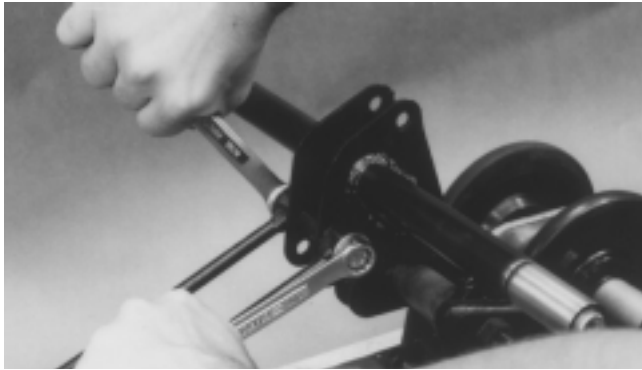
Fig. 9-423



AG309

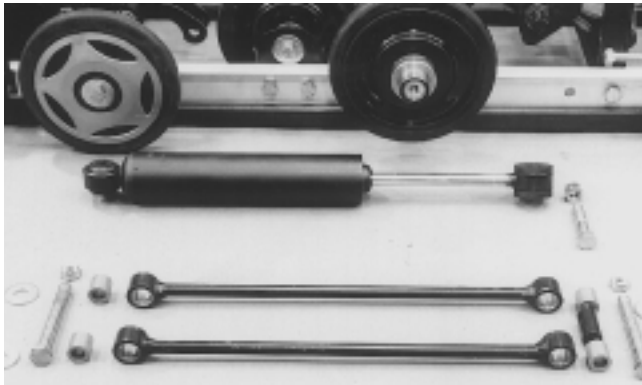
3. Remove the cap screw and lock nut securing the shock links to the upper arm bracket. Account for the spacer, two shock link axles, and washers.

Fig. 9-424



AG310

Fig. 9-425



AG316

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the shock absorber for any signs of oil leakage especially at the point where the shock shaft enter the shock body.
2. Inspect the rubber shock bushings located in the shock absorber eyelets for cracks or deterioration.
3. Inspect the shock absorber eyelet welds (at each end) for any cracks or signs of separation.
4. Inspect the welds securing the eyelets of the shock links for cracks or signs of separation. Either weld the eyelet or replace the shock link assembly.
5. Inspect the axle surfaces for any signs of corrosion. If corrosion is found, lightly buff the surface of the axle with #400 wet-or-dry sandpaper; then apply a light coat of grease.

ASSEMBLING

1. Apply a thin coat of grease to the upper shock absorber eyelet. Position the eyelet into the upper arm bracket and secure with a cap screw and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

Fig. 9-426



AG309

2. Apply a thin coat of grease to the outer surface of the shock link axles and slide the axles into the shock link eyelets.
3. Place the shock link eyelets on each side of the upper arm bracket and place a spacer into the bracket. Secure the shock links and spacer to the upper arm bracket using a cap screw, washers (on the outside of each eyelet), and lock nut. Tighten lock nut to 3.2 kg-m (23 ft-lb).

■ **NOTE:** When installing shock links, the longest side of the shock eyelet must be positioned toward the shock absorber.

Fig. 9-427



AG313

4. Place the lower shock absorber eyelet into the rear pivot bracket; then place the lower shock link eyelet with bushings into position and secure the lower shock link eyelet and the shock absorber to the rear pivot bracket with a cap screw, two washers, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

■ **NOTE:** Do not over-tighten the shock cap screws as the shock eyelets must be free to pivot.

Fig. 9-428



AG314

Rear Shock Pivot

■ **NOTE:** The skid frame must be removed for this procedure.

DISASSEMBLING

1. Remove the cap screw and lock nut securing the lower shock absorber eyelet and shock links to the pivot tube bracket. Account for the two shock link axles.

Fig. 9-429



AG314

2. Remove the cap screw and flat washer securing the pivot arm axle to the pivot arm mounting bracket.
3. Slide the inner axle out of the pivot arm bracket far enough to remove the rear shock pivot and account for a spacer axle.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all shock pivot components.

2. Inspect all axles for wear or damage.
3. Inspect idler wheel and hub for cracks or damage.
4. Inspect rear pivot for damage.

ASSEMBLING

1. Align the rear shock pivot with the spacers, idler wheels, and washers installed between the pivot arm brackets; then slide the pivot axle through the brackets.
2. Place the lower shock absorber eyelet into the rear pivot bracket; then place the lower shock link eyelets with bushings into position and secure the lower shock link eyelets and the shock absorber to the rear pivot bracket with a cap screw, two washers, and lock nut. Tighten to 3.2 kg-m (23 ft-lb).

■ **NOTE:** Do not over-tighten the shock cap screws as the shock eyelets must be free to pivot.

Center Inner Idler Wheels

■ **NOTE:** The skid frame does not have to be removed for this procedure.

REMOVING

1. Remove the cap screws and flat washers securing the idler wheels and spring slides to the center idler wheel brackets.

Fig. 9-430



AG403

2. Slide the inner axle out of the center idler wheel brackets and remove the idler wheels. Account for two spacer axles and six washers.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect each idler wheel and plastic hub for cracks or damage.
2. Rotate the idler wheel bearings (by hand) and inspect for binding or roughness.

INSTALLING

1. Position the idler wheels with spacers and spacer washers (one on each side of idler wheel) between the center idler wheel brackets.
2. Slide the inner axle through the idler wheel brackets, idler wheels, spacers, and spacer washers.
3. Place the spring slides onto the springs and idler wheel brackets; then secure with two flat washers and cap screws (coated with red Loctite #271). Tighten to 2.4 kg-m (17 ft-lb).

Fig. 9-431



AG403

Slide Rail

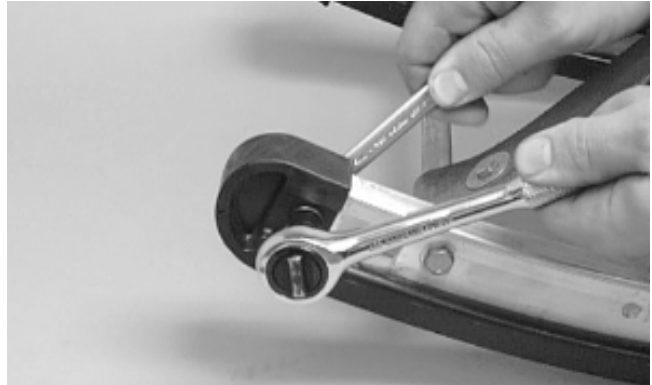
■ **NOTE:** The skid frame must be removed for this procedure.

REMOVING

■ **NOTE:** When it is necessary to replace one or both slide rails, it is recommended that one slide rail be removed at a time. The remaining slide rail will then hold the crossbraces and brackets in their correct assembly order. This method is much quicker than to completely disassemble the entire skid frame.

1. Remove the cap screw, washer, and lock nut securing the end cap to the slide rail. Remove the end cap from the slide rail.

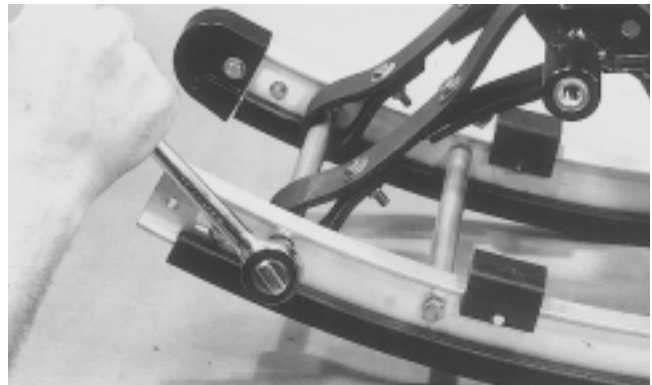
Fig. 9-432



AG297D

2. Remove the four cap screws securing both front crossbraces between the slide rails; then remove the crossbraces.

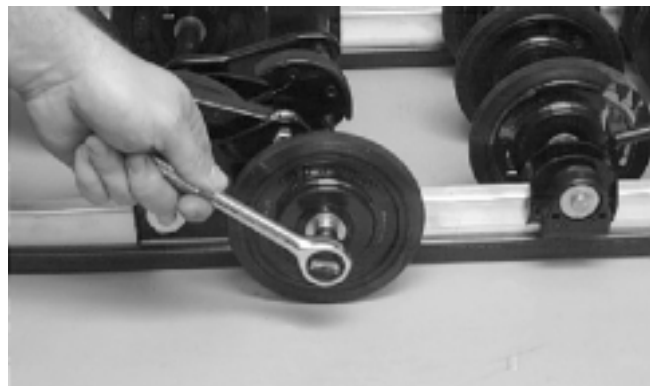
Fig. 9-433



AG301

3. Remove the push nuts and pins securing the rubber shock pads; then remove the shock pads.
4. Remove the cap screw and flat washer securing the outer idler wheel to the front arm bracket.

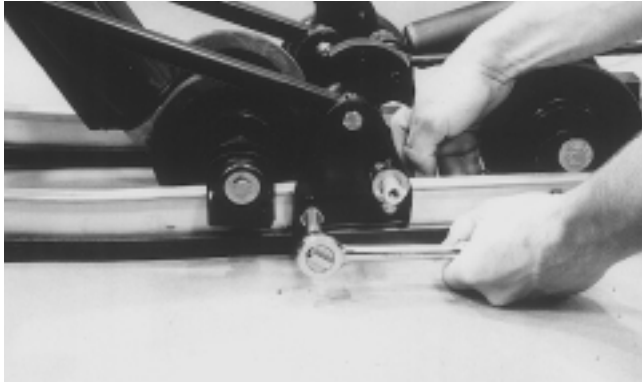
Fig. 9-434



AG322D

5. Remove the three cap screws and lock nuts securing the front arm bracket to the slide rail.

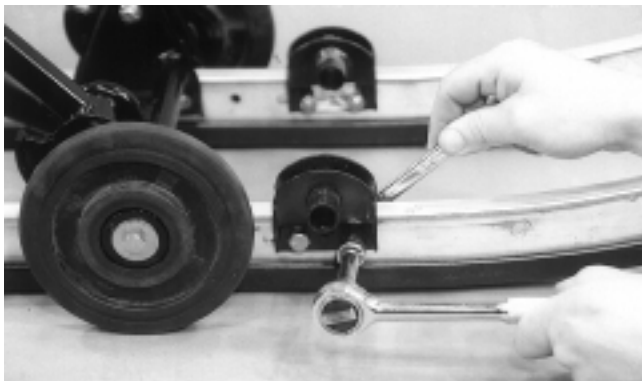
Fig. 9-435



AG323

6. Remove the two cap screws and lock nuts securing the center inner idler wheel bracket to the slide rail.

Fig. 9-436



AG390

7. Remove the cap screws and large flat washers securing the center pivot idler wheels; then remove the idler wheels.

Fig. 9-437



AG600

8. Remove the two cap screws and lock nuts securing the auxiliary wheel bracket.
9. Remove the cap screw, lock nut, and two washers securing the spring block.

10. Remove the long cap screw securing the lower rear arm assembly to the slide rails.

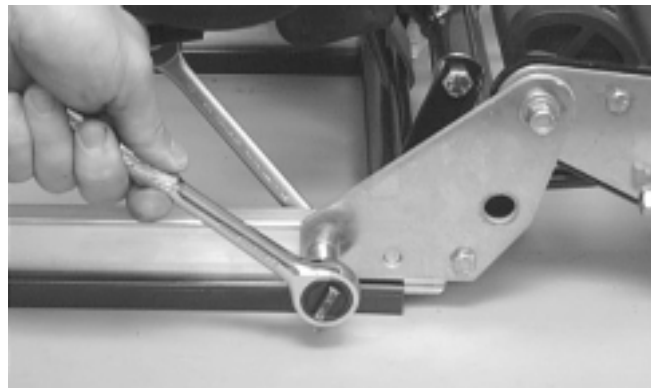
Fig. 9-438



AG332D

11. Remove two cap screws securing each of the articulating frame brackets; then remove the articulating skid frame. Account for spacers.

Fig. 9-439



AG611D

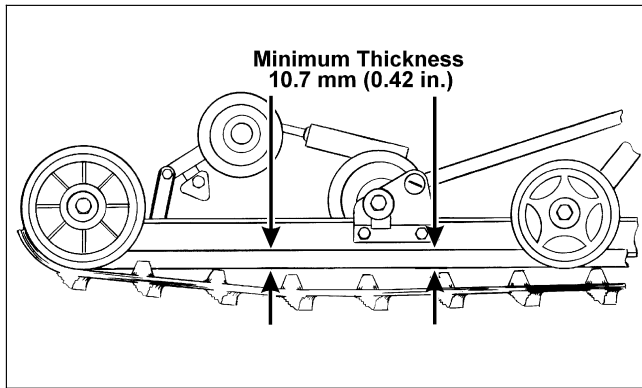
12. Remove the cap screw and nut securing the spring tension block to the slide rail. Account for the washers.
13. With all bracket hardware removed, pull the slide rail slowly forward and out of all brackets.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the slide rail for cracks or unusual bends.
2. Inspect the wear strip for wear. The wear strip must be 10.7 mm (0.42 in.) thick or thicker. If the wear strip measurement is less than specified, replacement of both wear strips is necessary.

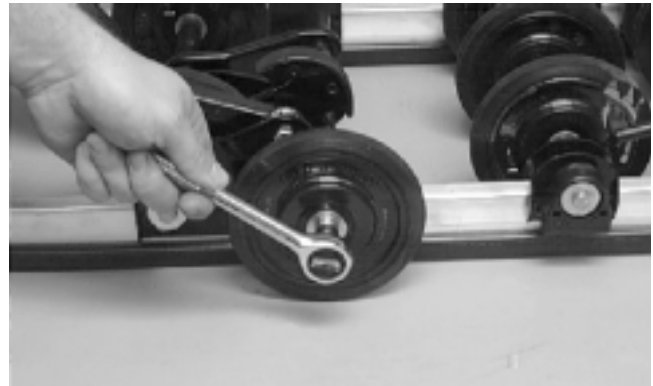
Fig. 9-440



INSTALLING

1. Starting in front, place the back end of the slide rail into the first bracket and slowly work it back through all brackets. Install the cap screws and lock nuts securing the slide rail to the brackets. Tighten all slide rail hardware to the recommended torque specifications.
2. Place the spring tension block into position on the slide rail and secure with a cap screw, two washers, and a lock nut. Tighten securely ensuring free movement of the spring tension block.
3. Place the articulating skid frame into position, install spacers, and secure with four cap screws and lock nuts. Tighten to 2.4 kg-m (17 ft-lb).
4. Secure the lower rear arm assembly with the long cap screw, lock nut (threads coated with red Loctite #271), and washers. Tighten to 3.2 kg-m (23 ft-lb).
5. Place the center pivot idler wheels into position and secure each with a large flat washer and cap screw. Tighten to 3.2 kg-m (23 ft-lb).
6. Align the auxiliary wheel bracket, center idler wheel bracket, front arm bracket, and front idler wheel bracket with the appropriate holes in the skid frame. Secure each with cap screws and lock nuts. Tighten to 2.4 kg-m (17 ft-lb).
7. Install the outer idler wheel on the front arm bracket. Secure with a cap screw (coated with red Loctite #271) and lock nut. Tighten to 2.4 kg-m (17 ft-lb).

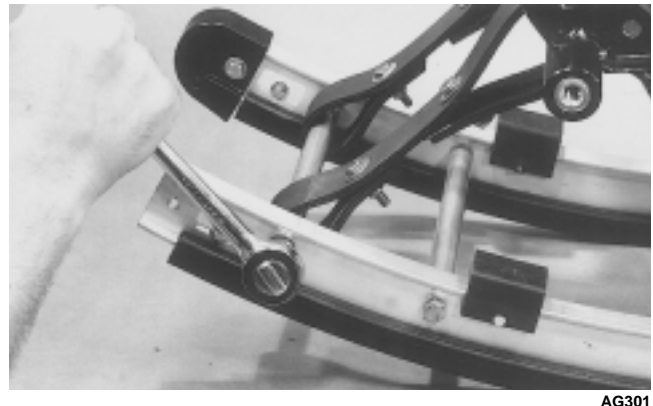
Fig. 9-441



8. Place the shock pads into position and secure with pins and push nuts.
9. Install both front crossbraces between the slide rails. Secure with four cap screws (coated with red Loctite #271). Tighten to 2.4 kg-m (17 ft-lb).

■ **NOTE:** Be sure to place the forward crossbrace tube through the limiter straps.

Fig. 9-442



10. Place the end cap onto the rail and secure with the cap screw, washer, and lock nut. Tighten to 1.1 kg-m (8 ft-lb).

Installing Skid Frame

1. Place a piece of cardboard on the floor to protect against scratching and tip the snowmobile onto one side.
2. Pull the track away from the tunnel and spread open; then place the skid frame into the track. Slide the inner axles through the upper and rear arms of the skid frame.

■ **NOTE:** The proper front arm tunnel mounting hole to use will depend on which position the front arm brackets are mounted in on the slide rails. If the front arm brackets are positioned in the rear rail mounting holes, use the upper rear mounting holes.

3. Position the front of the skid frame into the tunnel and align the front arm with the appropriate mounting hole in the tunnel. Slide the lock washer onto the cap screw; then secure the front arm to the tunnel with the cap screw and lock washer. Thread the cap screw in only half way. **DO NOT TIGHTEN AT THIS TIME.**

■ **NOTE:** To aid in centering the front arm with the holes in the tunnel, position the skid frame and track at a 45° angle to the bottom of the tunnel.

4. Slide the skid frame and track into the tunnel.
5. Tip the snowmobile onto the opposite side and install the remaining front arm cap screw and lock washer. Use the same procedure as step 3.
6. Align the rear arm with the forward mounting hole in the bracket. Secure the rear arm with a cap screw and lock washer. **DO NOT TIGHTEN AT THIS TIME.**

■ **NOTE:** Do not tighten any of the four cap screws until all have been started. To obtain proper alignment of the rear arm, pry the arm in the proper direction until alignment is obtained.

7. Again tip the snowmobile onto the opposite side and install the remaining rear arm cap screw and lock washer. Follow the same procedure as in step 6.
8. Tighten all four skid frame mounting cap screws to 3.2 kg-m (23 ft-lb).
9. Check track tension; adjust as necessary (see Track Tension in this sub-section).
10. Check track alignment; adjust as necessary (see Track Alignment in this sub-section).

Track Tension

WARNING

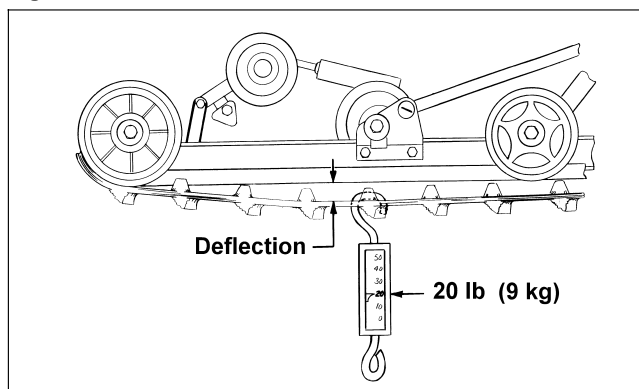
Turn all switches to the OFF position.

CHECKING DEFLECTION

1. Tip the snowmobile on its side.
2. Hook a spring scale around a track clip at mid-span; then pull the track down with the scale to 9 kg (20 lb) and measure the distance between the bottom of the wear strip and the inside surface of the track clip. Track deflection must be within specifications.

Rear Suspension Style	Setup Tension	After Break-In Tension
FasTrack w/o Torque Sensing Link	19-25 mm (3/4-1 in.)	25-32 mm (1-1 1/4 in.)
FasTrack w/Torque Sensing Link (121 in. Track)	32-38 mm (1 1/4-1 1/2 in.)	38-44 mm (1 1/2-1 3/4 in.)
FasTrack w/Torque Sensing Link (136 in. Track)	38-44 mm (1 1/2-1 3/4 in.)	50.8-57.2 mm (2-2 1/4 in.)

Fig. 9-443



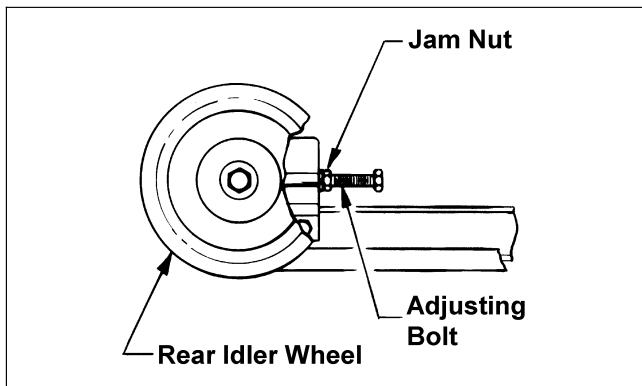
729-429A

■ **NOTE:** If the track is new, it will stretch slightly and take a "set" within the first 300 to 500 miles of operation.

ADJUSTING DEFLECTION

1. Place the snowmobile on a shielded safety stand. Check to make sure the track is 2 - 3 in. off the floor.
2. If the measurement is not as specified, loosen the jam nuts of the adjusting bolts.

Fig. 9-444



0727-456

3. If the measurement is more than specified, tighten the adjusting bolts. If the measurement is less than specified, loosen the adjusting bolts. When the measurement is within specification range, lock the adjustment by bottoming the jam nuts against the axle housings.

■ **NOTE:** Vigorously push the underside of the track up and down. Track must not hit the top of the tunnel or slap the skid frame.

4. After correct track tension is obtained, check track alignment (see Track Alignment in this sub-section).

■ **NOTE:** Track tension and track alignment are interrelated; always check both even if only one adjustment seems necessary. Always establish correct track tension before checking and/or adjusting alignment.

Track Alignment

■ **NOTE:** Proper track alignment is when the rear idler wheels are equidistant from the inner drive lugs on the inside surface of the track.

CHECKING

1. Using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.



WARNING

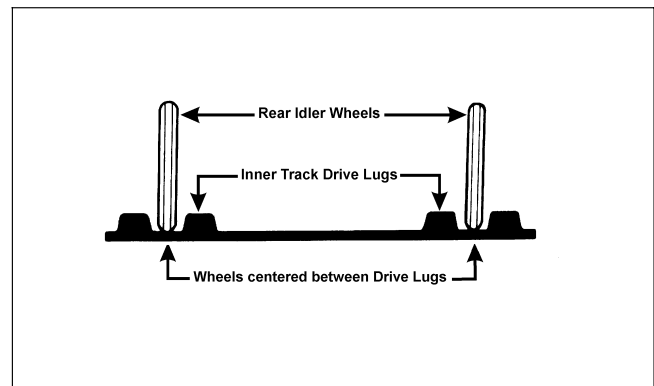
The tips of the skis must be positioned against a wall or similar object for safety. Keep hands, feet, and clothing away from moving components.

2. Start the engine and accelerate slightly. Use only enough throttle to rotate the track several revolutions. SHUT THE ENGINE OFF.

■ **NOTE:** Allow the track to coast to a stop. DO NOT apply the brake because it could produce inaccurate alignment conditions.

3. When the track stops rotating, check the relationship of the rear idler wheels and the inner track drive lugs. If the distance from the idler wheels to the inner track drive lugs is the same on both sides, no adjustment is necessary.

Fig. 9-445



725-070A

■ **NOTE:** If the distance from the idler wheels to the inner track drive lugs is not the same on both sides, an adjustment is necessary.

ADJUSTING

1. On the side of the track which has the inner drive lugs closer to the rear idler wheel, loosen the adjusting bolt jam nut; then rotate the adjusting bolt clockwise 1-1 1/2 turns.
2. Continue to check the track alignment and make the necessary adjustments until proper alignment is obtained.
3. After proper track alignment is obtained, lock the adjusting bolt jam nut against the axle housing.

■ **NOTE:** Make sure correct track tension is maintained after adjusting track alignment.

■ **NOTE:** Field test the track under actual conditions and, after the field test, recheck track alignment and track tension; adjust as necessary.

Overload Springs

To either engage or disengage the spring tension blocks, use the Spring Block Tool, a spark plug socket, and a screwdriver and rotate the spring block to the desired position. Both spring blocks must be in the same position (either engaged or disengaged).

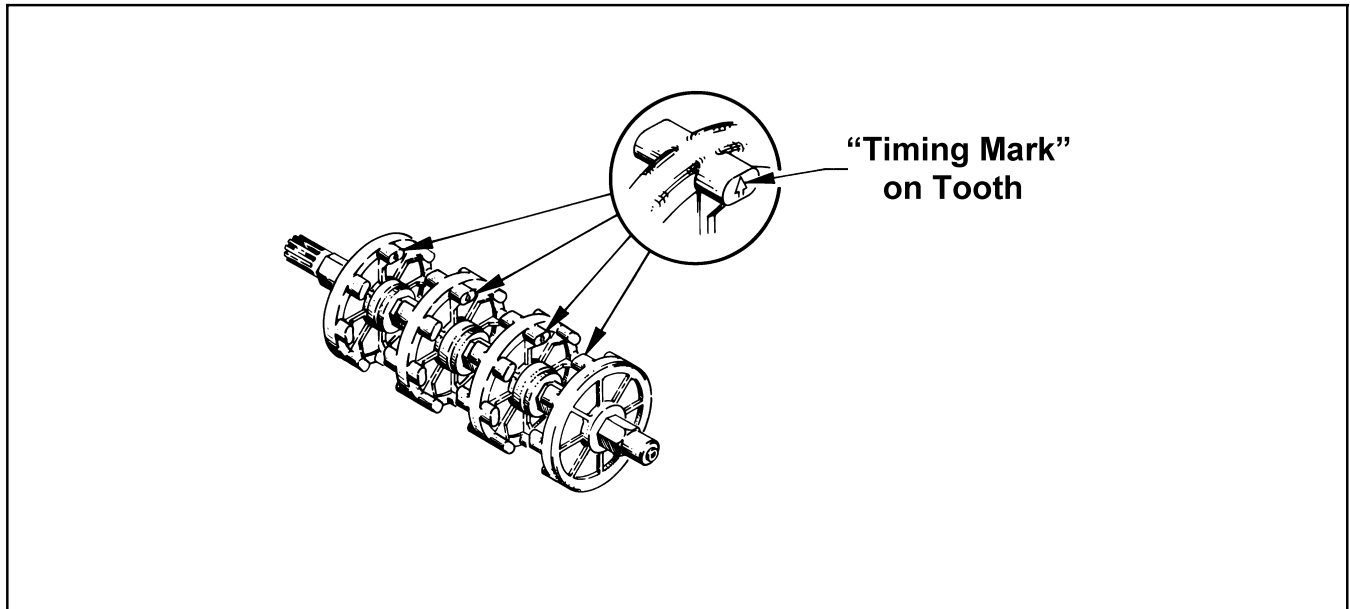
DRIVE SPROCKET LOCATION (1984-2000)

The following drawings will provide all necessary information to relocate sprockets on the driveshaft.

When information is required to assemble the driveshaft, refer to the parts manual for model being worked on; then refer to the following illustrations using the part number listed in the parts manual as a reference.

When pressing new sprockets on the driveshaft, remember to align the sprocket alignment marks or the sprockets won't be timed correctly. See illustration below.

Fig. 9-446



0727-829

5.890 5.890 9.230 1.562

.70 Ref .70 Ref

④ ① ② ③

Sprocket E Sprocket

①

Drawing is not to scale

0000-004

Technical drawing of a shaft assembly with three sprockets. The drawing shows a shaft with three sprockets mounted on it. Dimensions are given: 5.890 between sprocket centers, 9.230 between the first and last sprocket centers, and 1.562 for the last sprocket's width. Callouts include "Sprocket" for the first and third sprockets, and "E Sprocket" for the middle one. A dimension of ".70 Ref" is shown for the sprocket width. A callout "4" points to the shaft end, and "3" points to the shaft end on the right.

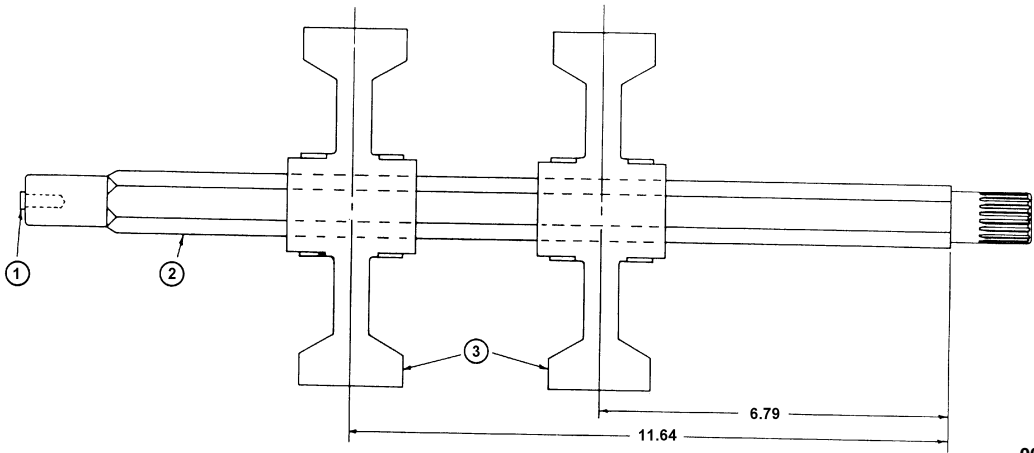
0000-004

Technical drawing of a shaft assembly. The shaft is shown with a threaded section on the left (callout 1) and a tapered section on the right (callout 4). The shaft is supported by four bearings (callout 2) and has four flanges (callout 3). Dimensions are given in inches:

- 2.53
- 6.79
- 11.64
- 15.90

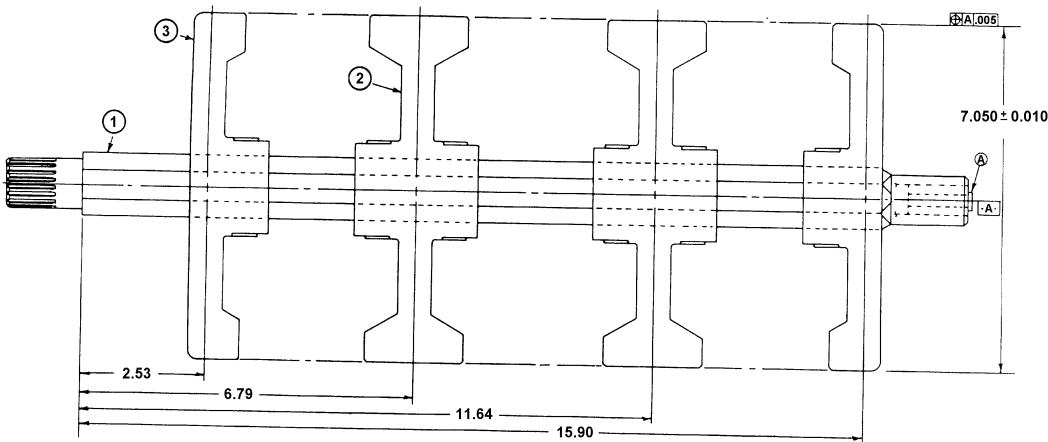
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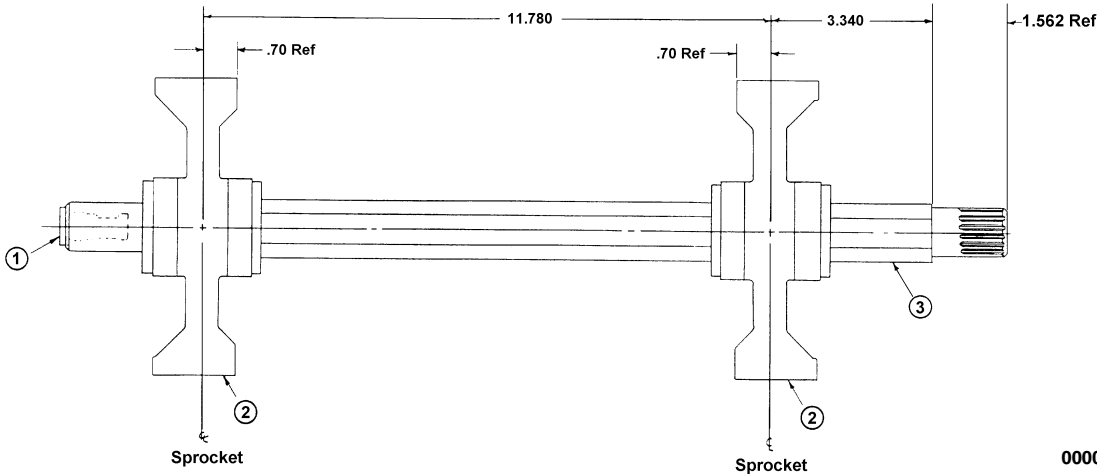
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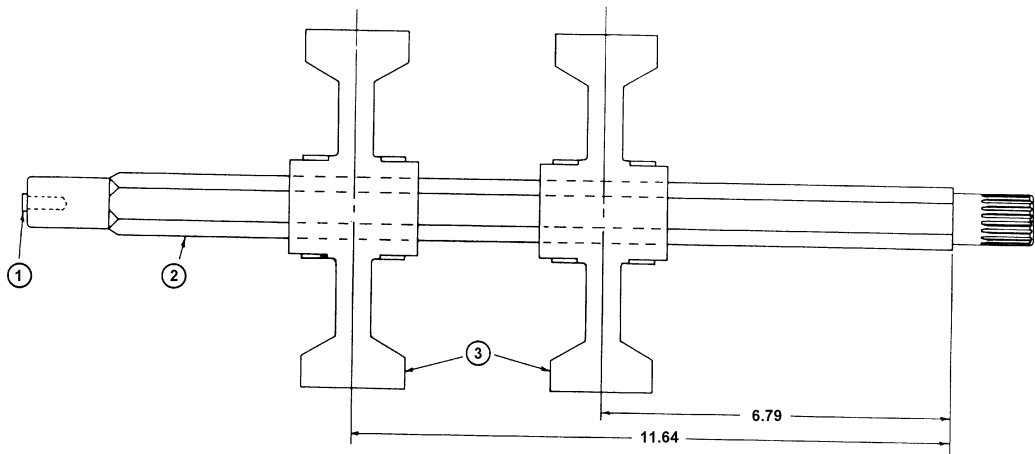
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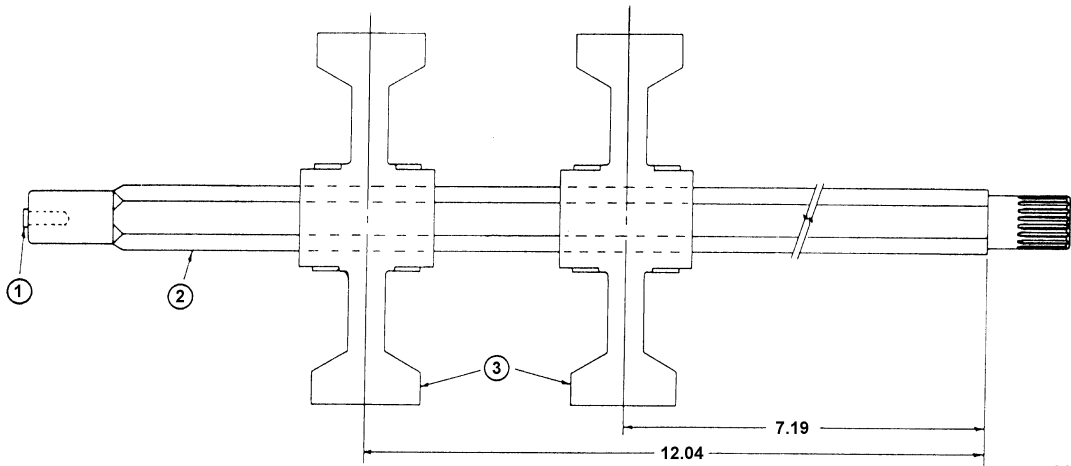
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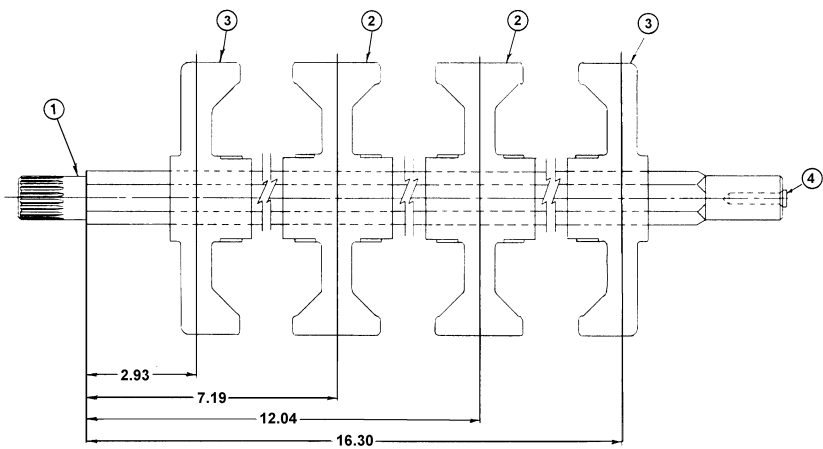
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0728-010 — 0728-019



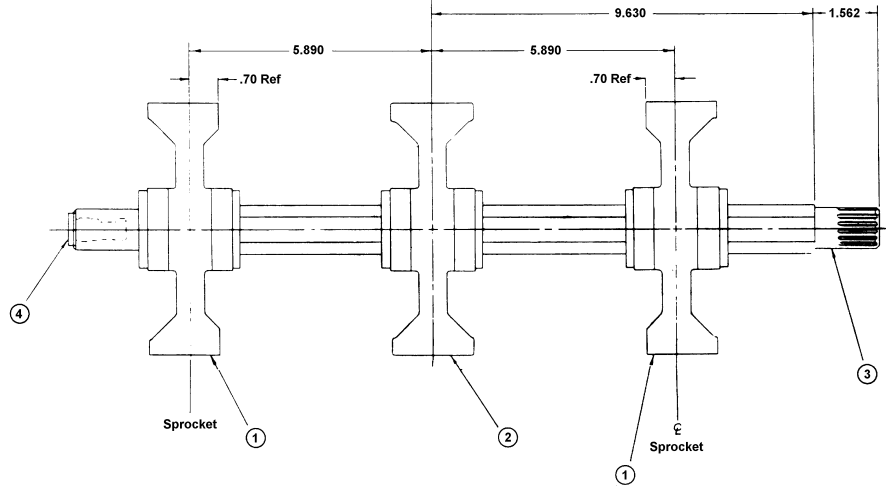
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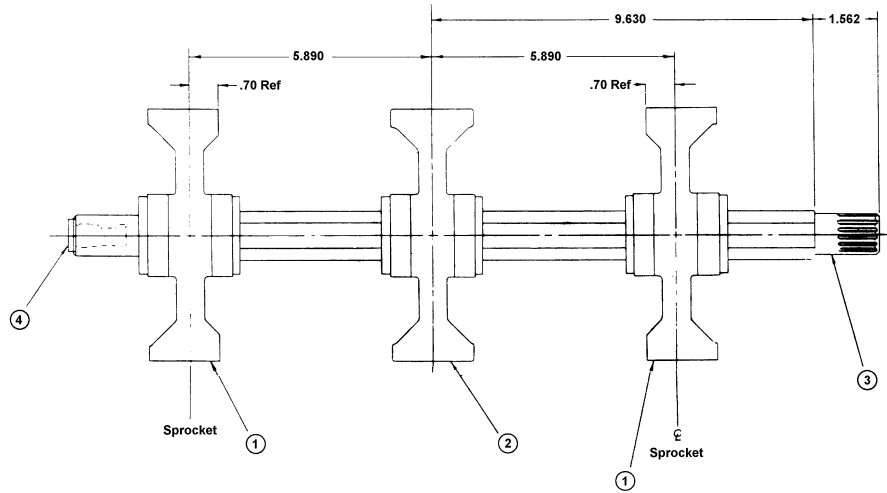
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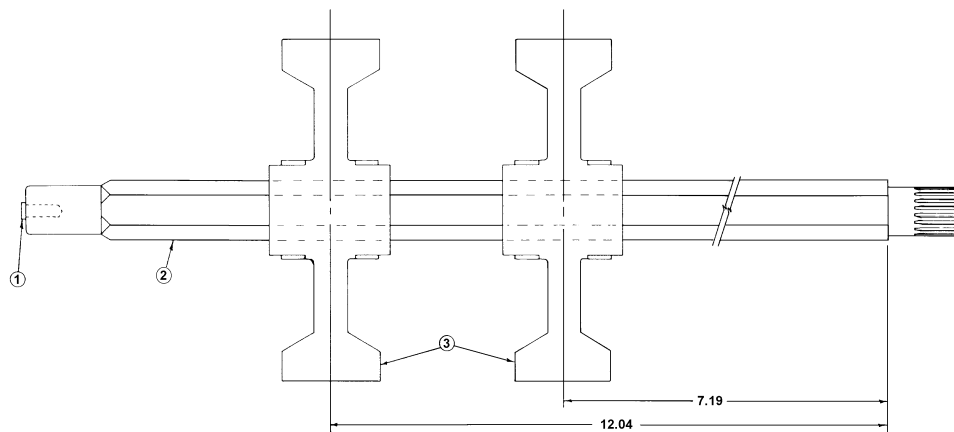
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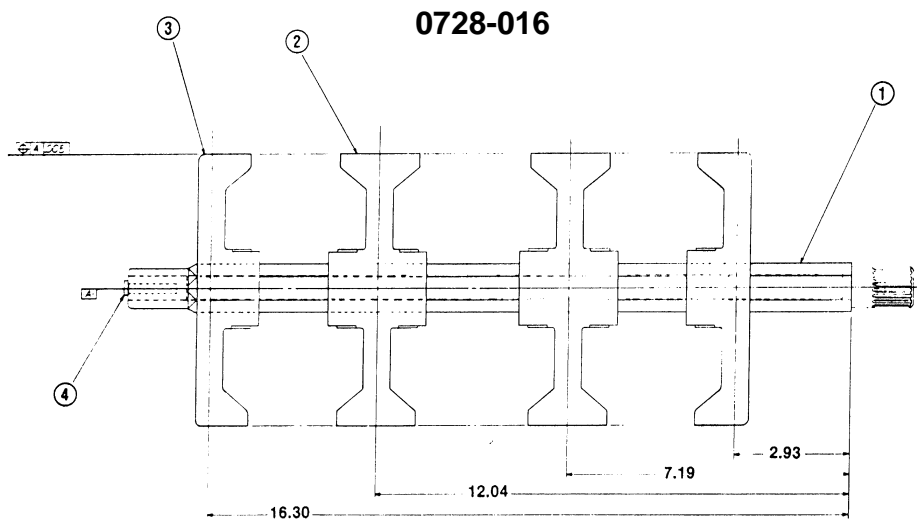


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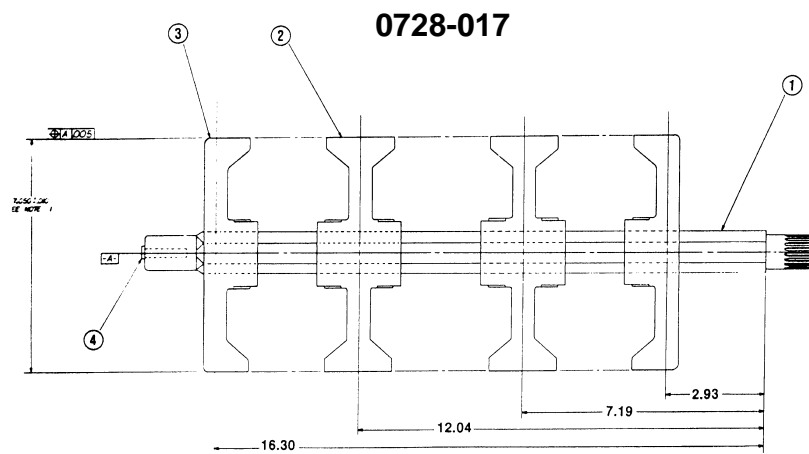
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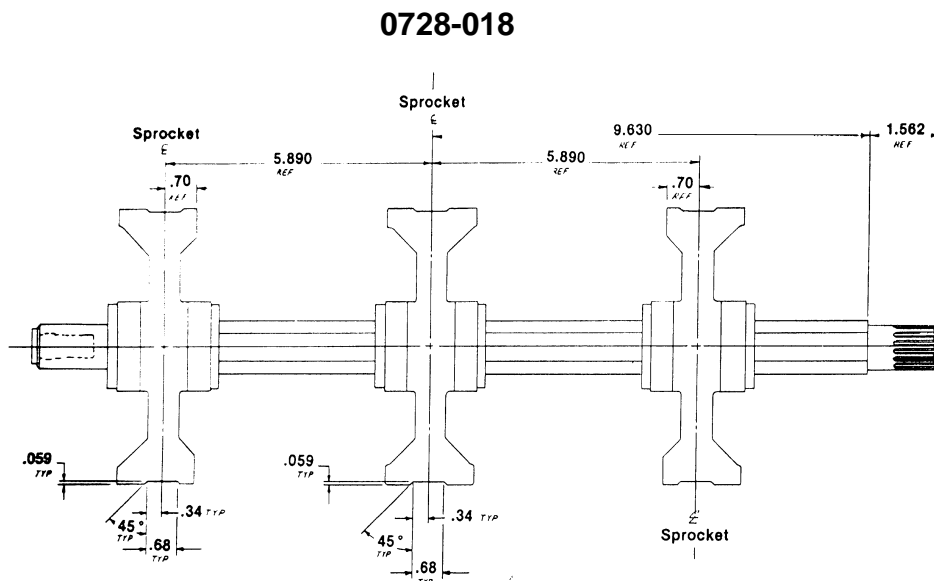
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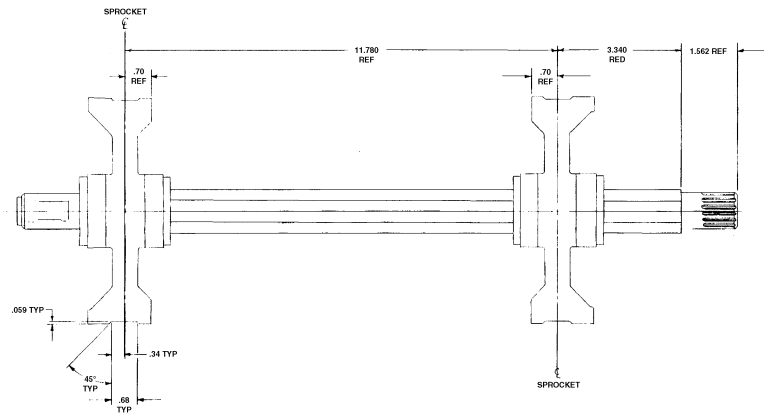


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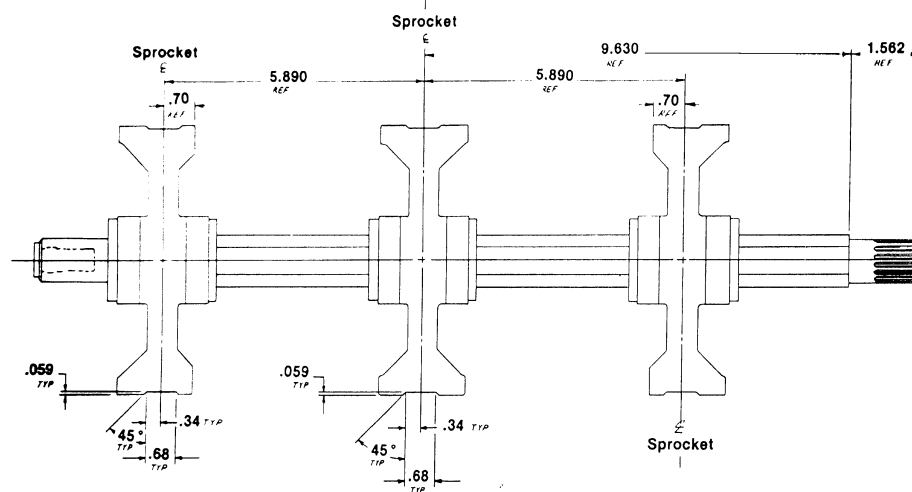
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0728-021



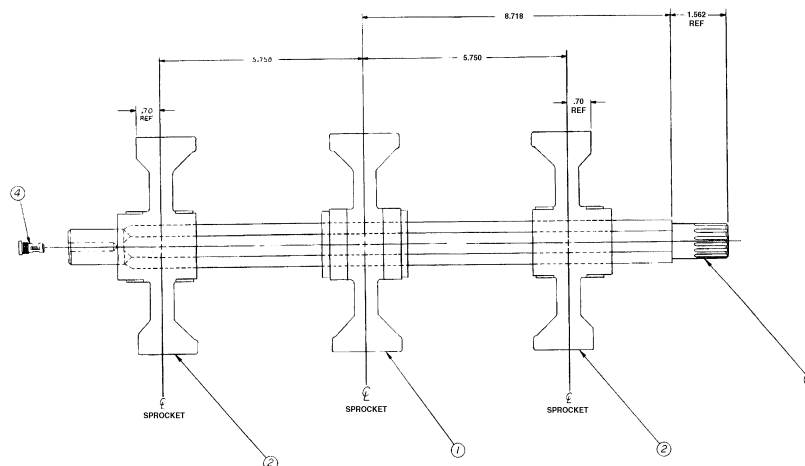
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0728-022



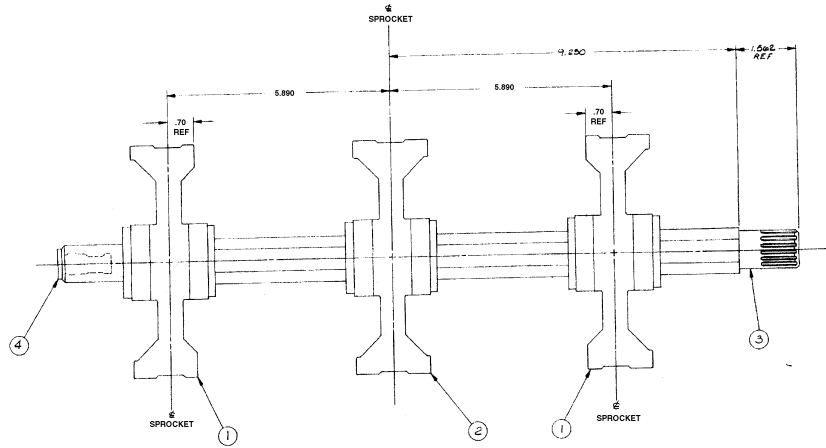
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0728-023



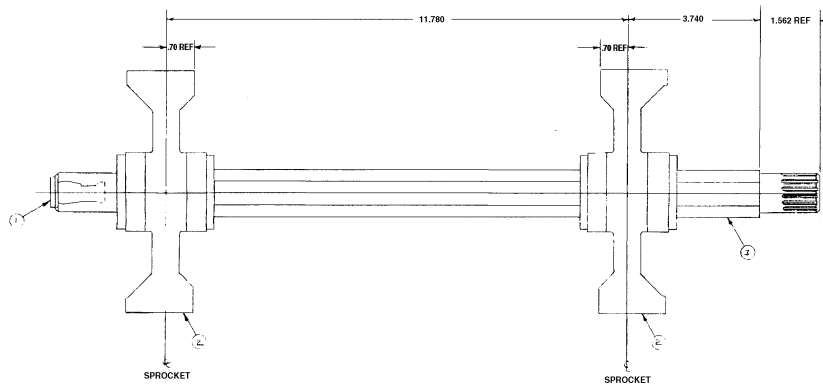
0000-089

0728-024



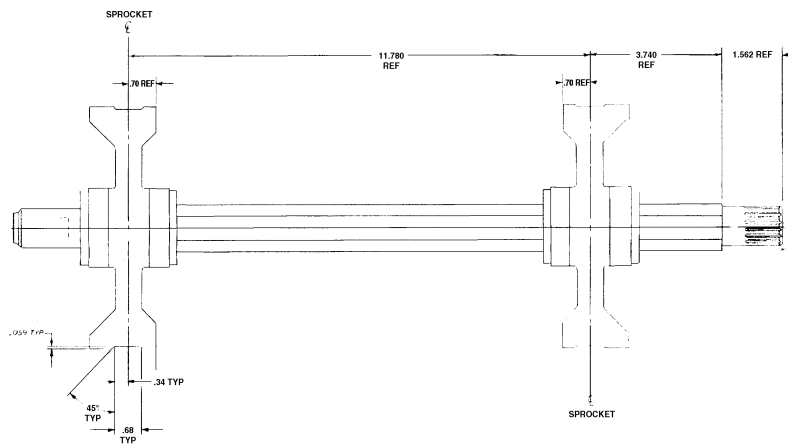
0000-090

0728-025

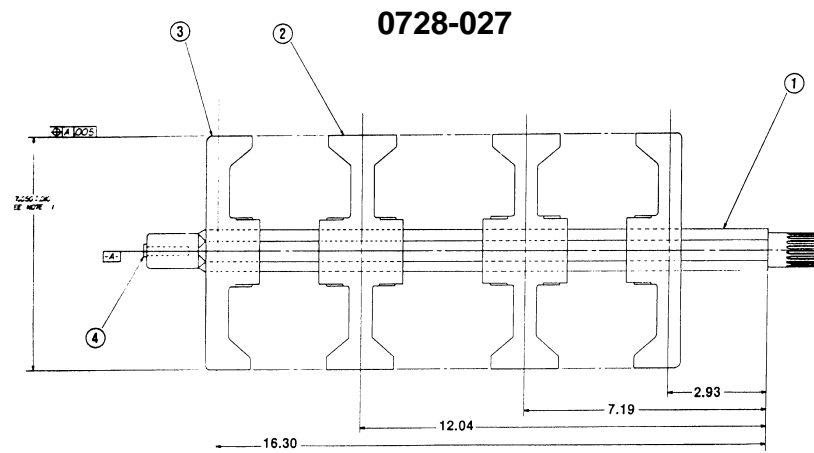


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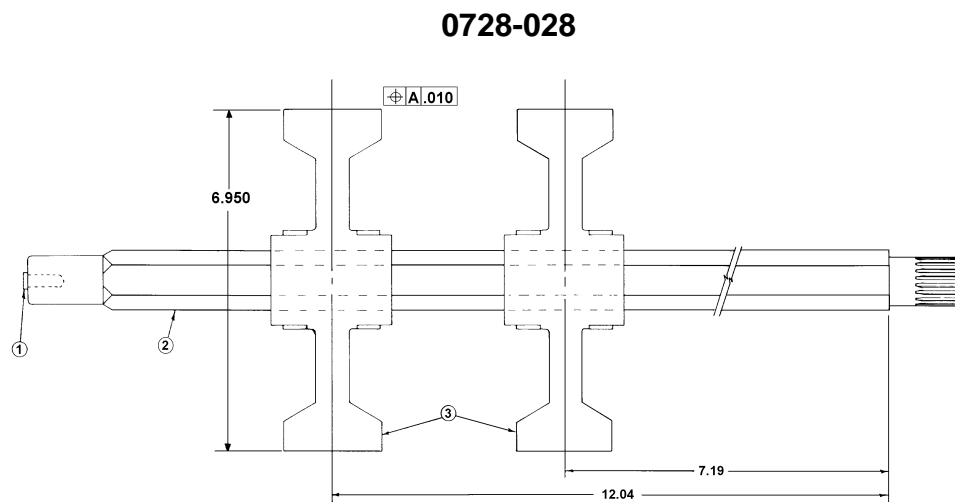
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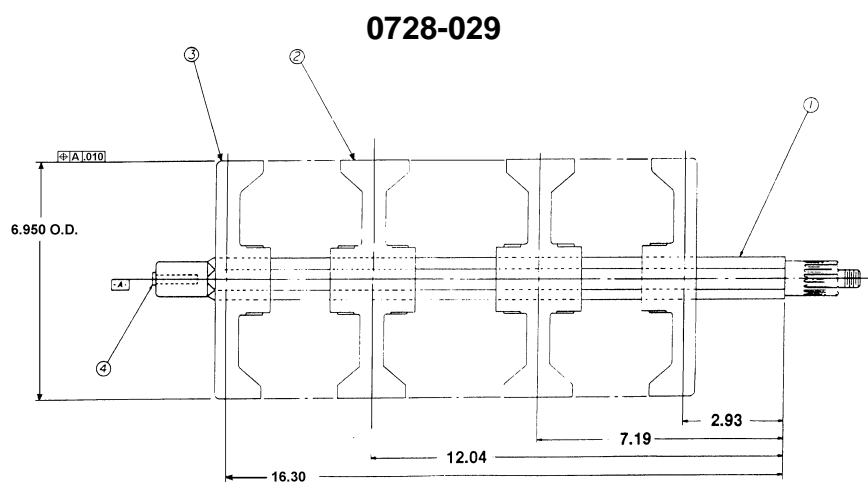
0000-092



0000-017

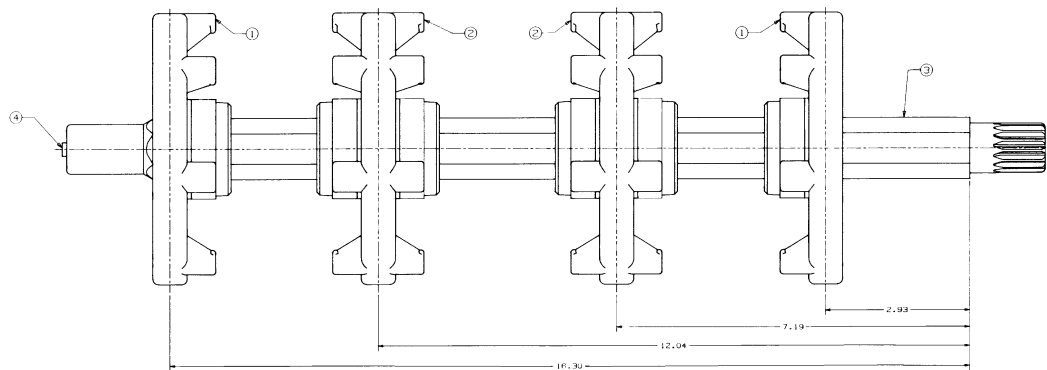


0000-020



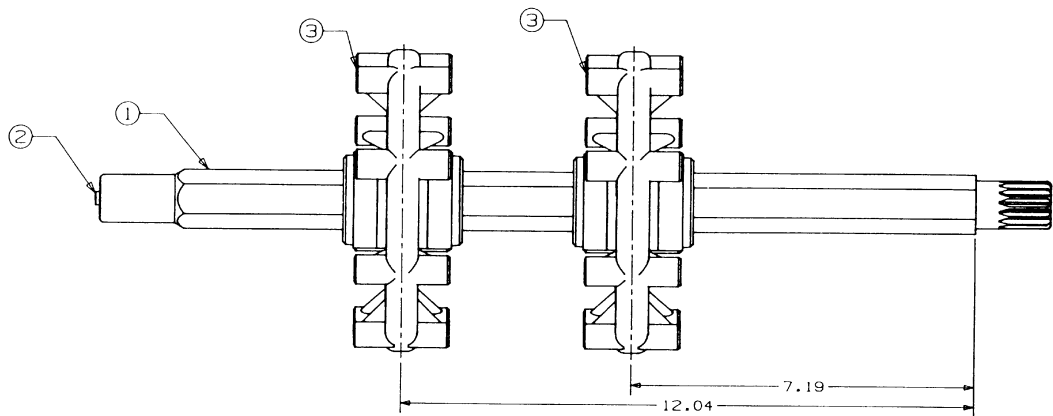
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0728-030



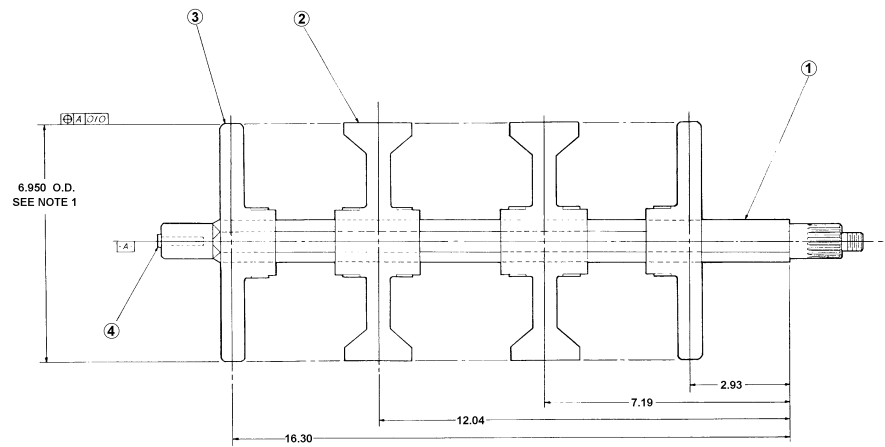
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0728-031



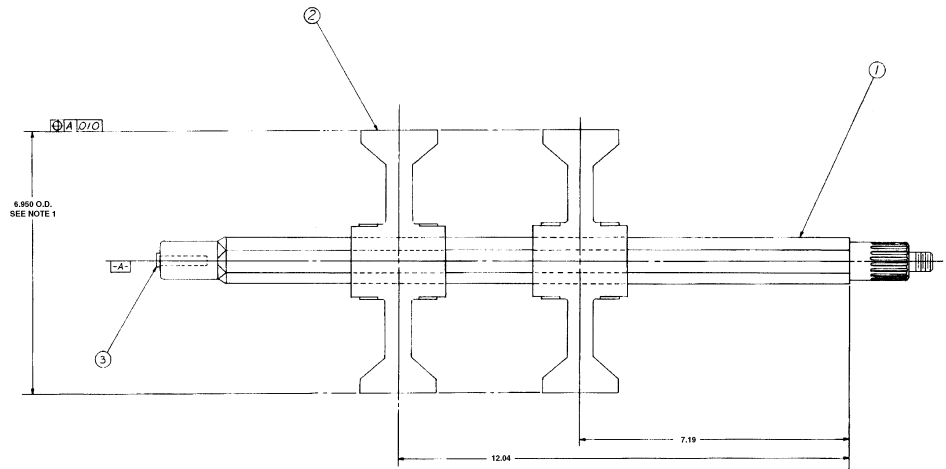
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0728-032



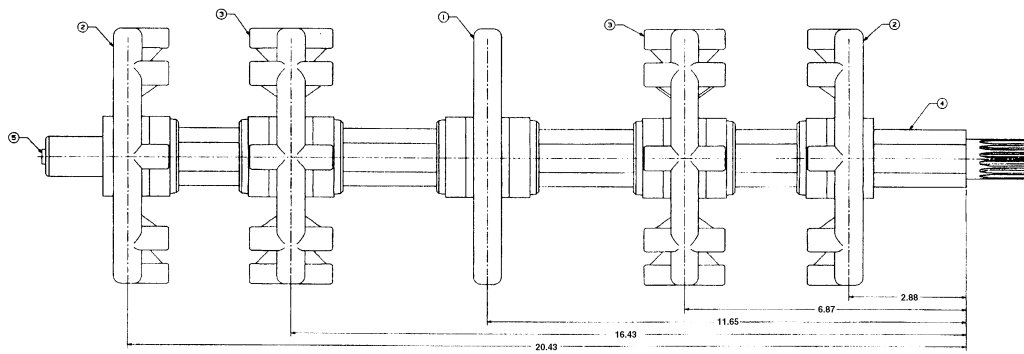
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0728-033



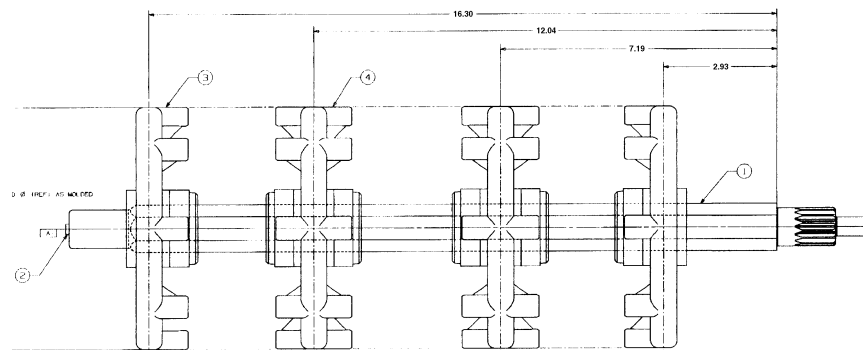
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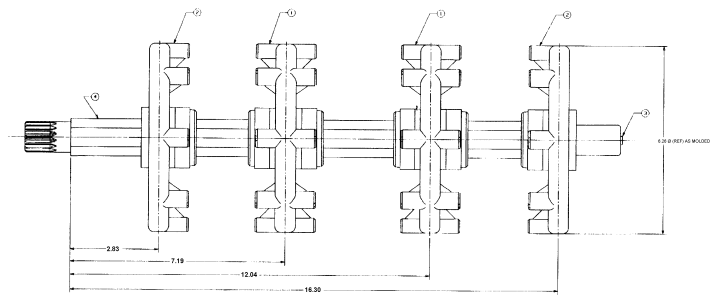
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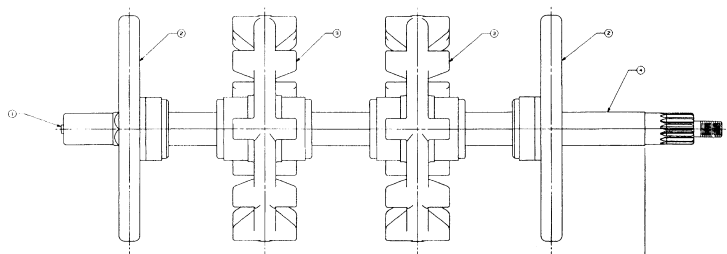
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0728-037



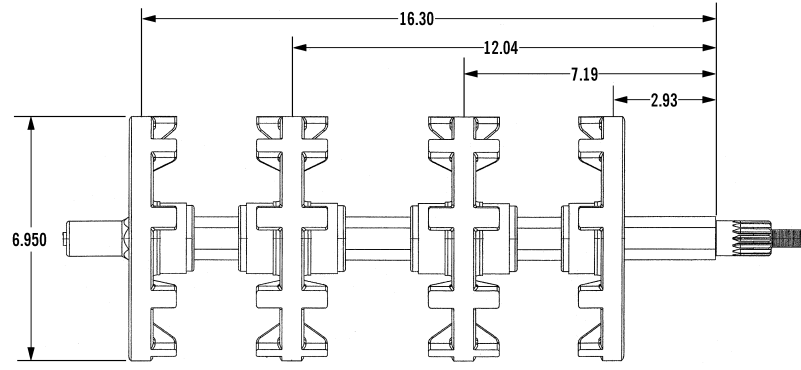
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0728-038



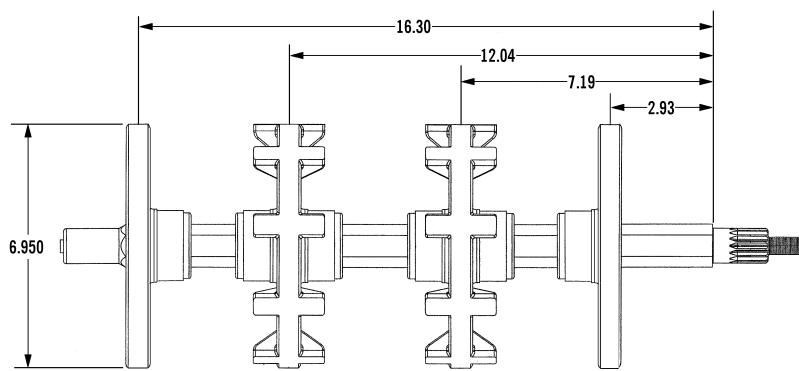
0728-039

0000-097



0728-041

0735-365



0735-366

DRIVE TRACK USAGE CHART (1984-2000)

Below is a listing of drive tracks for Arctic Cat snowmobiles. This chart lists each track with its specifications such as length, pitch, width, rail centers, and bar grip design.

From the information provided in this chart, note what other tracks can be substituted as a replacement track if a recommended track isn't available. Pay close attention to all critical specifications when choosing an alternative track. Do not select a track with a lower rating than the track being replaced.

P/N	Length	Width	Pitch	Rail Center	# Lugs in Center Belt	Bar Design	Rating	Lug Height
0102-294	121"	16"	3.29"	7.5"	Two	Regular	4	.610"
0102-314	151"	15"	2.52"	7.5"	Two	Regular	4	.610"
0602-001	156"	16"	2.52"	7.5"	Two	Regular	4	.610"
0602-116	121"	16"	2.52"	7.5"	Two	Regular	4	.610"
0602-239	121"	16"	2.52"	7.5"	Two	Full Block	2	.710"
0602-240	136"	16"	2.52"	7.5"	Two	Full Block	2	.710"
0602-241	156"	16"	2.52"	7.5"	Two	Full Block	2	.710"
0602-242	136"	15"	2.52"	8.84"	Two	Full Block	2	.710"
0602-247	116"	15"	2.52"	7.5"	Two	Full Block	2	.725"
0602-249	131"	15"	2.52"	7.5"	Two	Full Block	2	.710"
0602-252	151"	15"	2.52"	7.5"	Two	Full Block	2	.710"
0602-443	121"	15"	2.52"	8.84"	Four	Full Block	2	.725"
0602-478	121"	15"	2.52"	8.84"	Four	Full Block Clip	4	.710"
0602-534	136"	15"	2.52"	8.84"	Four	Full Block	2	.710"
0602-535	136"	15"	2.52"	8.84"	Four	Full Block	2	.710"
0602-753	121"	15"	2.52"	8.84"	Four	Full Block	2	.725"
0602-754	136"	15"	2.52"	8.84"	Four	Full Block	2	.725"
0602-725	156"	16"	2.52"	8.84"	Two	Full Block	2	.725"
0602-755	136"	15"	2.52"	8.84"	Four	Full Block	2	.725"
0602-677	121"	15"	2.52"	8.84"	Four	Full Block	4	.725"
0602-752	121"	15"	2.52"	8.84"	Two	Full Block	2	.725"
0602-756	136"	15"	2.52"	8.84"	Four	Full Block	4	.725"
0602-759	136"	15"	2.52"	8.84"	Four	Wave	4	.920"
0602-762	156"	16"	2.52"	8.84"	Two	Full Block	2	.725"
0602-798	121"	15"	2.52"	8.84"	Four	Full Block	4	.725"
0602-805	136"	15"	2.52"	8.84"	Four	Deep Lug	2	1.4"
0602-824	121"	15"	2.52"	8.84"	Four	Deep Lug	2	1.4"
0602-829	121"	15"	2.52"	8.84"	Four	Deep Lug	4	1.4"
*6799-841	121"	15"	2.52"	8.84"	Two	Deep Lug	4	2.0"
6799-842	136"	15"	2.52"	8.84"	Two	Deep Lug	4	2.0"
0602-861	156"	20"	2.52"	13.50"	Four	Full Block	4	.850"
0602-868	121"	15"	2.52"	8.84"	Two	Full Block	2	.725"
0602-869	136"	15"	2.52"	8.64"	Four	Deep Lug	4	1.4"
0602-904	136"	15"	2.52"	8.84"	Two	Deep Lug	4	1.6"
0602-905	136"	15"	2.52"	8.84"	Two	Deep Lug	4	2.0"
0602-921	121"	15"	2.52"	8.84"	Two	Full Block	4	.725"
0602-922	121"	15"	2.52"	8.84"	Two	Full Block	4	.725"
0602-923	121"	15"	2.52"	8.84"	Two	Full Block	4	.850"
0602-928	121"	15"	2.52"	8.84"	Two	Full Block	4	.725"
0602-962	156"	20"	2.52"	13.5"	Four	Full Block	4	1.0"
0602-935	156"	16"	2.52"	8.84"	Two	Full Block	4	1.0"
1602-004	121"	15"	2.52"	8.84"	Two	Full Block	4	.850"
1602-005	121"	15"	2.52"	8.84"	Four	Full Block	4	.850"
0602-153	115"	16"	2.52"	8.84"	Two	Full Block	2	.850"
1602-033	121"	15"	2.52"	8.84"	Four	Full Block	4	.850"
1602-008	121"	15"	2.52"	8.84"	Four	Aggressive Wave	4	1.25"
1602-647	136"	15"	2.52"	8.84"	Four	Aggressive Wave	4	N/A
6909-819	136"	15"	2.52"	8.84"	Four	Wave	4	1.25"
6799-800	136"	15"	2.52"	8.84"	Four	Wave	4	1.50"
0602-531	136"	15"	2.52"	8.84"	Four	Wave	2	.900"

* This track can only be used on AWS V chassis with a Torque Sensing Link Rear Suspension.

IDLER WHEEL SELECTION CHART

P/N	Diameter	I.D.	Insert Part Number		Width	Color Spoke
0114-209	4.25 in.	0.625 in.	0104-340	0104-341	0.75 in.	Not spoked
0114-159	5.00 in.	0.625 in.	0104-340	0104-341	1.05 in.	Not spoked
0114-245	5.25 in.	0.625 in.	0104-340	0104-341	1.00 in.	Not spoked
0604-004	5.35 in.	0.625 in.	0104-340	0104-341	1.00 in.	Not spoked
0604-225	5.35 in.	0.625 in.	0104-340	0104-341	1.12 in.	Chrome
0604-226	5.35 in.	0.625 in.	0604-220		1.33 in.	Chrome
0604-227	5.35 in.	0.625 in.	0604-220		1.33 in.	Gold
0604-235	5.35 in.	0.625 in.	0104-340	0104-341	1.12 in.	Gold
0604-332	5.35 in.	0.625 in.	0104-304	0104-341	1.12 in.	Black
0604-334	5.35 in.	0.625 in.	0604-220		1.33 in.	Black
0114-240	5.63 in.	0.625 in.	0104-340	0104-341	1.00 in.	Not spoked
0604-205	5.63 in.	.9843 in.	NONE		1.00 in.	Not spoked - has hole for wrench
0604-234	5.63 in.	0.625 in.	0604-220		1.33 in.	Gold
0604-239	5.63 in.	0.625 in.	0104-340	0104-341	1.12 in.	Gold
0604-240	5.63 in.	0.625 in.	0104-340	0104-341	1.12 in.	Chrome
0604-281	5.63 in.	0.625 in.	0604-220		1.33 in.	Silver
0604-327	5.63 in.	0.625 in.	0604-220		1.12 in.	Chrome
0604-328	5.63 in.	0.625 in.	0604-220		1.12 in.	Gold
0604-333	5.63 in.	0.625 in.	0604-220		1.12 in.	Black
0604-374	5.63 in.	.9843 in.	NONE		1.00 in.	Not spoked - S/A 0604-205 w/o hole
0604-450	5.63 in.	0.625 in.	0104-340	0104-341	0.875 in.	Not spoked - aluminum center
0604-459	5.63 in.	0.625 in.	0104-340	0104-341	1.00 in.	Not spoked
0604-981	5.63 in.	0.625 in.	0104-340	0104-341	1.12 in.	Green
0638-550	5.63 in.	0.625 in.	0104-340	0104-341	1.12 in.	Purple
0114-223	5.83 in.	0.750 in.	0104-342	0104-343	1.00 in.	Not spoked
0114-206	6.38 in.	0.625 in.	0104-340	0104-341	0.875	Not spoked - aluminum center
0114-210	6.38 in.	0.750 in.	0104-342	0104-343	1.00 in.	Not spoked
0604-210	6.38 in.	0.625 in.	0104-340	0104-341	1.00 in.	Not spoked
0604-222	6.38 in.	0.750 in.	0604-224		1.46 in.	Chrome
0604-223	6.38 in.	0.750 in.	0604-224		1.46 in.	Gold
0604-237	6.38 in.	0.625 in.	0604-220		1.46 in.	Gold
0604-238	6.38 in.	0.625 in.	0604-220		1.46 in.	Chrome
0604-331	6.38 in.	0.750 in.	0604-224		1.46 in.	Black
0604-670	6.38 in.	0.625 in.	0604-220		1.12 in.	Black
0604-969	6.38 in.	0.625 in.	0604-220		1.00 in.	Not spoked
0604-980	6.38 in.	0.625 in.	0604-220		1.12 in.	Green
0638-431	6.38 in.	0.750 in.	0604-224		1.46 in.	Purple
0104-298	7.125 in.	0.750 in.	0104-342	0104-343	.950 in.	Not spoked
0604-275	7.125 in.	0.625 in.	0604-220		1.46 in.	Silver
0604-276	7.125 in.	0.625 in.	0604-220		1.46 in.	Gold
0604-284	7.125 in.	0.625 in.	0104-341	0104-340	0.950 in.	Not spoked
0107-137	7.625 in.	0.750 in.	0104-342	0104-343	1.00 in.	Not spoked

Torque Specifications

REAR SUSPENSION		TORQUE
End Caps	ft-lb	8
	kg-m	1.1
Wear Strip/Rail	ft-lb	8
	kg-m	1.1
Idler Wheels (5/16-in. cap screw)	ft-lb	17
	kg-m	2.4
Idler Wheels (3/8-in. cap screw)	ft-lb	23
	kg-m	3.2
Mounting Block/Rail	ft-lb	23
	kg-m	3.2
Spring Slide Block/Rail	ft-lb	23
	kg-m	3.2
Offset Pivot Idler/Idler Arm	ft-lb	19
	kg-m	2.6
Rear Arm/Rail	ft-lb	23
	kg-m	3.2
Front Arm Mounting Bracket/ Rail	ft-lb	17
	kg-m	2.4
Front Arm/Mounting Brackets	ft-lb	30
	kg-m	4.2
Limiter Straps	ft-lb	8
	kg-m	1.1
Crossbrace/Rail	ft-lb	11
	kg-m	1.5
Shock Links	ft-lb	23
	kg-m	3.2
Shock Eyelets	ft-lb	23
	kg-m	3.2
Rear Arm/Idler Arm	ft-lb	23
	kg-m	3.2
Track Adjuster Bracket/Rail	ft-lb	11
	kg-m	1.5
Rear Arm Limiter/Rail	ft-lb	23
	kg-m	3.2
Skid Frame/Tunnel	ft-lb	23
	kg-m	3.2

REBUILDABLE SHOCK ABSORBER USAGE GUIDE

REAR SUSPENSION FRONT ARM				
Extended Length	Collapsed Length	Part No.	Year	Model
10.10	7.06	0604-430	1990	EXT Special
10.10	7.06	0604-473	1991	EXT Special, Prowler Special
10.10	7.06	0604-597	1992	EXT Special, Prowler Special
10.10	7.06	0604-597	1993	EXT 580Z
10.10	6.47	0604-651	1993	EXT 580Z
10.10	7.06	0604-698	1993	440 ZR, 580ZR
10.10	7.06	0604-770	1994	440 ZR*
10.10	7.06	0604-767	1994	440 ZR, 580ZR, 700ZR
10.10	7.06	0604-767	1995	580ZR, 600ZRT, 700ZR, 800 ZRT
10.10	7.06	0604-926	1995	440 ZR*
10.10	7.06	0604-767	1996	580ZR
10.10	7.43	1604-006	1996	600ZRT, 800ZRT
10.10	7.06	1604-036	1996	440ZR*, ZR 580 E.T.T.*
11.03	7.98	1604-163	1997	ZRT 800
11.03	7.98	1604-163	1997	ZRT 600
11.03	7.98	1604-163	1997	ZR 580 EFI
11.40	7.98	1604-113	1997	ZR 440*
11.40	7.98	1604-113	1998	ZR 440* (Consumer Model)
11.22	7.97	1604-379	1998	ZR 500
11.22	7.97	1604-379	1998	ZR 600, ZR 600 EFI
11.22	7.97	1604-379	1998	ZRT 600
11.22	7.97	1604-379	1998	ZRT 800
11.22	7.97	1604-379	1998	Thundercat, Thundercat M/C
11.22	7.97	1604-379	1998	Powder Special 600 EFI LE
11.40	7.98	1604-113	1998	ZR 600 EFI C.C.*
11.220	7.97	0704-384	1999	Powder Special 600 EFI LE, 700, 700 LE, ZRT 600, ZRT 800, Thundercat, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 700
11.400	7.98	1604-385	1999	ZR 500 LE*, ZR 500 EFI LE*, ZR 600 LE*, ZR 600 EFI LE*
11.220	7.970	0704-467	2000	Thundercat, Thundercat M/C, ZRT 600, ZRT 800, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse), Powder Special Models
11.470	7.980	0704-470	2000	ZR 600 EFI LE (Clicker), ZR 700 LE (Clicker)

* Remote Reservoir

REAR SUSPENSION REAR ARM				
Extended Length	Collapsed Length	Part No.	Year	Model
14.55	9.80	0604-427	1990	EXT Special
14.55	9.80	0604-476	1991	EXT Special, Prowler Special
14.55	9.80	0604-596	1992	EXT Special, Prowler Special
14.55	9.80	0604-652	1993	EXT 580Z
14.55	9.80	0604-699	1993	440 ZR, 580ZR
14.55	9.80	0604-768	1994	440 ZR, 580ZR, 700ZR
14.55	9.80	0604-768	1995	580ZR, 600ZRT, 700ZR, 800 ZRT
14.18	9.80	0604-931	1995	440 ZR
14.55	9.80	0604-768	1996	580ZR
14.73	9.88	1604-007	1996	600ZRT, 800ZRT
14.18	9.80	1604-035	1996	440ZR, ZR580 E.T.T.
14.35	9.88	1604-164	1997	ZRT 800
14.35	9.88	1604-164	1997	ZRT 600
14.35	9.88	1604-164	1997	ZR 580 EFI
14.28	10.03	1604-186	1997	ZR 440
14.28	10.03	1604-186	1998	ZR 440 (Consumer Model)
14.35	9.88	1604-382	1998	ZR 500
14.35	9.88	1604-382	1998	ZR 600, ZR 600 EFI
14.35	9.88	1604-382	1998	ZRT 600
14.35	9.88	1604-382	1998	ZRT 800
14.35	9.88	1604-382	1998	Thundercat, Thundercat M/C
14.35	9.88	1604-382	1998	Powder Special 600 EFI LE
14.28	10.03	1604-186	1998	ZR 600 EFI C.C.
14.35	9.88	0704-435	1999	Powder Special 600 EFI LE, 700, 700 LE, ZRT 600, ZR 500, ZR 500 LE, ZR 500 EFI, ZR 500 EFI LE, ZR 600, ZR 600 LE, ZR 600 EFI, ZR 600 EFI LE, ZR 700
14.28	10.30	0704-450	1999	ZRT 800, Thundercat
14.350	9.880	0704-468	2000	ZRT 600, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse), Powder Special Models
14.350	9.880	0704-469	2000	Thundercat, Thundercat M/C, ZRT 800
14.480	9.880	0704-475	2000	ZR 600 EFI LE (Clicker), ZR 700 LE (Clicker)

SKI SUSPENSION SHOCKS				
Extended Length	Collapsed Length	Part No.	Year	Model
10.03	7.07	0603-184	1990	EXT Special
14.28	9.38	0603-273	1991	EXT Special, Prowler Special
14.28	9.38	0603-419	1992	EXT Special, Prowler Special
14.28	9.50	0603-453	1993	EXT 580Z
13.10	8.87	0603-452	1993	440 ZR, 580ZR
13.06	8.87	0603-557	1994	440 ZR
14.02	8.87	0603-627	1995	440 ZR*
13.10	8.87	0603-563	1994, 95, 96	580 ZR
13.10	8.87	0603-560	1994, 95	700 ZR
13.10	8.87	0603-560	1995	600ZRT, 800ZRT
13.10	8.97	0603-708	1996	800ZRT
14.36	9.62	0603-685	1996	600ZRT
16.40	10.40	0603-717	1996	440ZR*
14.02	8.87	0603-735	1996	ZR580 E.T.T.
14.36	9.62	0603-896	1997	ZRT 800
14.36	9.62	0603-896	1997	ZRT 600
14.36	9.62	0603-896	1997	ZR 580 EFI
16.40	10.40	0603-717	1997	ZR 440*
16.40	10.40	0603-717	1998	ZR 440* (Consumer Model)
16.40	10.97	1603-027	1998	ZR 500
16.40	10.97	1603-027	1998	ZR 600, ZR 600 EFI
14.36	9.52	1603-176	1998	ZRT 600
14.36	9.52	1603-176	1998	ZRT 800
14.36	9.52	1603-176	1998	Thundercat, Thundercat M/C
16.40	10.97	1603-027	1998	Powder Special 600 EFI L.E.
16.40	10.40	0603-717	1998	ZR 600 EFI C.C.*
16.4	10.97	1603-027	1999	Powder Special 600 EFI LE, 700 LE
14.3	9.96	1603-218	1999	Powder Special 700
16.4	10.97	1603-027	1999	ZRT 600, ZRT 800, Thundercat, ZR 500
16.4	10.97	1603-027	1999	ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 700
16.4	10.4	1603-193	1999	ZR 500 LE*, ZR 500 EFI LE*, ZR 600 LE*
16.4	10.4	1603-193	1999	ZR 600 EFI LE*
17.950	11.470	0703-666	2000	Thundercat, ZRT 600, ZRT 800, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse)
14.300	9.900	0703-672	2000	Powder Special 500 EFI LE, Powder Special 600 EFI LE, Powder Special 700, Powder Special 700 LE
16.400	10.970	0703-679	2000	Thundercat M/C
17.990	11.470	0703-716	2000	ZR 600 EFI LE (Clicker)*, ZR 700 LE (Clicker)*
17.990	11.470	0703-717	2000	ZR 600 EFI LE (Clicker)*, ZR 700 LE (Clicker)*

* Remote Reservoir w/Clicker

REBUILDABLE SHOCK ACCESSORY PART NUMBERS

1991 & Newer Shocks

P/N	DESC.
0603-348	Valve, Shock 1.300 Dia. x .006 in. Thk.
0603-349	Valve, Shock 1.300 Dia. x .008 in. Thk.
0603-350	Valve, Shock 1.300 Dia. x .010 in. Thk.
0603-891	Valve, Shock 1.300 Dia. x .012 in. Thk.
0603-890	Valve, Shock 1.300 Dia. x .015 in. Thk.
0603-345	Valve, Shock 1.250 Dia. x .006 in. Thk.
0603-346	Valve, Shock 1.250 Dia. x .008 in. Thk.
0603-347	Valve, Shock 1.250 Dia. x .010 in. Thk.
0603-883	Valve, Shock 1.250 Dia. x .012 in. Thk.
0603-889	Valve, Shock 1.250 Dia. x .015 in. Thk.
0603-892	Valve, Shock 1.100 Dia. x .004 in. Thk.
0603-342	Valve, Shock 1.100 Dia. x .006 in. Thk.
0603-343	Valve, Shock 1.100 Dia. x .008 in. Thk.
0603-344	Valve, Shock 1.100 Dia. x .010 in. Thk.
0603-882	Valve, Shock 1.100 Dia. x .012 in. Thk.
0603-888	Valve, Shock 1.100 Dia. x .015 in. Thk.
0603-893	Valve, Shock 1.000 Dia. x .004 in. Thk.
0603-339	Valve, Shock 1.000 Dia. x .006 in. Thk.
0603-340	Valve, Shock 1.000 Dia. x .008 in. Thk.
0603-341	Valve, Shock 1.000 Dia. x .010 in. Thk.
0603-881	Valve, Shock 1.000 Dia. x .012 in. Thk.
0603-887	Valve, Shock 1.000 Dia. x .015 in. Thk.
0603-894	Valve, Shock .900 Dia. x .004 in. Thk.
0603-336	Valve, Shock .900 Dia. x .006 in. Thk.
0603-337	Valve, Shock .900 Dia. x .008 in. Thk.
0603-338	Valve, Shock .900 Dia. x .010 in. Thk.
0603-880	Valve, Shock .900 Dia. x .012 in. Thk.
0603-886	Valve, Shock .900 Dia. x .015 in. Thk.
0603-895	Valve, Shock .800 Dia. x .004 in. Thk.
0603-333	Valve, Shock .800 Dia. x .006 in. Thk.
0603-334	Valve, Shock .800 Dia. x .008 in. Thk.
0603-335	Valve, Shock .800 Dia. x .010 in. Thk.
0603-879	Valve, Shock .800 Dia. x .012 in. Thk.
0603-885	Valve, Shock .800 Dia. x .015 in. Thk.
0603-731	Valve, Shock .700 Dia. x .004 in. Thk.
0603-330	Valve, Shock .700 Dia. x .006 in. Thk.
0603-331	Valve, Shock .700 Dia. x .008 in. Thk.
0603-332	Valve, Shock .700 Dia. x .010 in. Thk.
0603-878	Valve, Shock .700 Dia. x .012 in. Thk.
0603-884	Valve, Shock .700 Dia. x .015 in. Thk.

P/N	DESC.
0603-204	Piston .041 in. Orifice
0603-206	Piston .059 in. Orifice
0603-207	Piston .076 in. Orifice
0603-208	Piston .078 in. Orifice
0603-209	Piston .081 in. Orifice
0603-388*	Piston .070 in. Orifice
0603-418	Piston .043 in. Orifice
0603-512	Piston .098 in. Orifice
0604-531*	Piston .067 in. Orifice
0604-536	Piston .052 in. Orifice
0603-551	Piston .125 in. Orifice
0603-601	Piston .093 in. Orifice
0604-627	Piston .046 in. Orifice
0604-636	Piston .067 in. Orifice
0604-741*	Piston .093 in. Orifice
0604-742	Piston .063 in. Orifice

■ **NOTE:** Shock Oil (p/n 0636-664) is available from Arctic Cat Parts Department.

SHOCK ABSORBER USAGE GUIDE

Below is a list of shock absorbers used on the front and rear suspensions of many Arctic Cat snowmobiles. Specifications given for each shock absorber include collapsed and extended length, stroke, and both rebound and compression valving ratings.

When using the shock absorber guide, always select a shock absorber with the same length, both collapsed and extended. Shock valving selection will depend on personal preference.

P/N	Collapsed Length	Extended Length	Stroke	Rebound Valving	Compression Valving
0604-217	10.190"	16.250"	6.06"	3	1
0604-464	10.190"	16.250"	6.06"	2	3
0604-591	10.170"	16.250"	6.06"	1	2
0604-308	9.580"	15.020"	5.45"	1	2
0604-311	9.580"	15.020"	5.45"	4	3
0604-402	9.580"	15.020"	5.45"	3	4
0604-659	9.580"	15.020"	5.45"	2	1
0604-737	9.580"	15.020"	5.44"	2	2
0604-763	9.580"	15.020"	5.44"	4	3
0604-923	9.580"	15.020"	5.44"	1	1
0604-404	9.700"	15.020"	5.32"	3	3
0604-453	9.700"	15.020"	5.32"	2	2
0604-462	9.700"	15.020"	5.32"	1	1
0604-664	9.590"	14.020"	4.61"	2	2
0604-665	9.590"	14.020"	4.61"	1	1
0603-420	9.380"	14.280"	4.950"	2	3
0603-555	9.410"	13.540"	4.130"	1	1
0603-645	9.290"	13.050"	3.760"	2	2
0604-755	7.060"	10.100"	3.040"	3	1
0604-533	7.060"	9.710"	2.650"	2	3
0604-599	7.060"	10.100"	3.040"	1	2
0603-792	9.830"	15.290"	5.46"	1	2
1604-102	9.560"	15.010"	5.45"	1	1
1604-101	7.670"	11.420"	3.75"	3	1
1604-196	7.670"	11.370"	3.70"	3	1
0603-117	7.060"	10.030"	2.97"	1	1
1604-093	7.670"	11.370"	3.70"	3	2
0603-758	9.830"	15.290"	5.47"	2	2
1604-369	8.420"	12.490"	4.07"	2	2

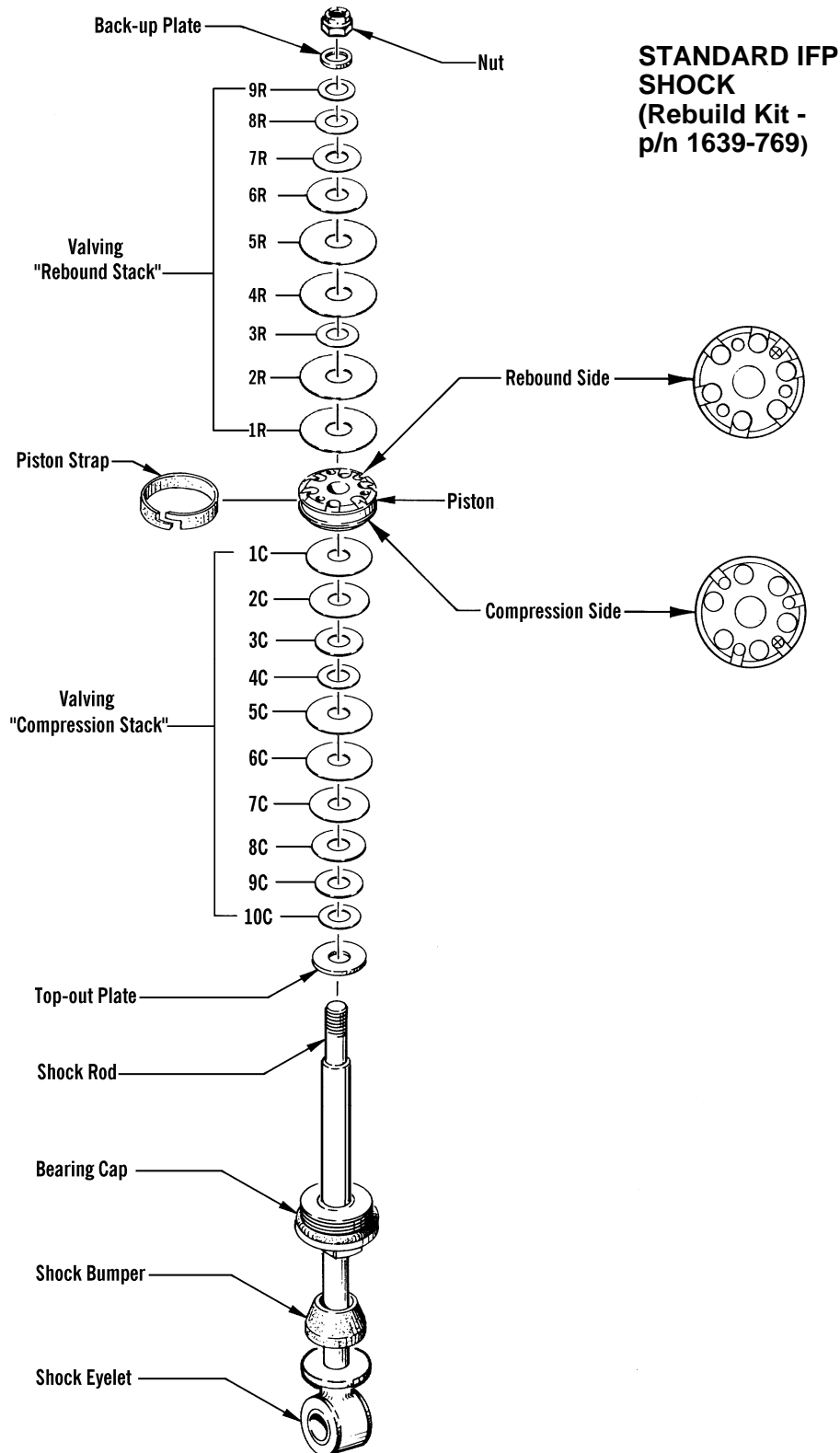
■ NOTE: Rebound and compression valving is rated on a scale of 1 - 4 (1 being the stiffest and 4 being the softest).

Ryde FX					
P/N	Collapsed Length	Extended Length	Stroke	Rebound Valving	Compression Valving
0604-756	9.590"	14.200"	4.61"	3	3
0604-757	9.590"	14.200"	4.61"	2	2
0604-758	9.590"	14.200"	4.61"	1	2
0604-909	9.550"	14.570"	5.020"	2	1
0603-649	9.560"	13.100"	3.840"	2	1
1604-001	9.550"	14.570"	5.020"	1	1
1604-011	9.550"	14.570"	5.020"	3	3
1604-092	9.580"	14.700"	5.12"	1	1
0604-997	7.490"	10.110"	2.87"	3	1
1604-085	10.590"	16.710"	6.12"	1	1
0603-843	9.460"	14.300"	4.85"	2	2
1604-176	9.540"	14.660"	5.12"	1	2
1604-212	9.540"	14.660"	5.12"	1	2
1604-218	10.570"	16.640"	6.07"	2	1
0603-901	9.940"	15.170"	5.24"	2	2
1603-172	9.960"	14.300"	4.35"	2	3
1603-173	9.080"	13.790"	4.47"	2	3
1603-174	10.460"	16.300"	5.85"	2	3
1603-175	11.330"	17.060"	5.73"	2	3
1604-368	8.380"	12.110"	3.74"	1	1
1604-370	10.550"	16.670"	6.12"	1	1
1604-371	9.550"	14.670"	5.12"	1	1
1604-372	9.550"	14.670"	5.12"	1	1
1603-200	9.080"	13.790"	4.47"	2	3
1603-201	9.960"	14.300"	4.35"	2	3

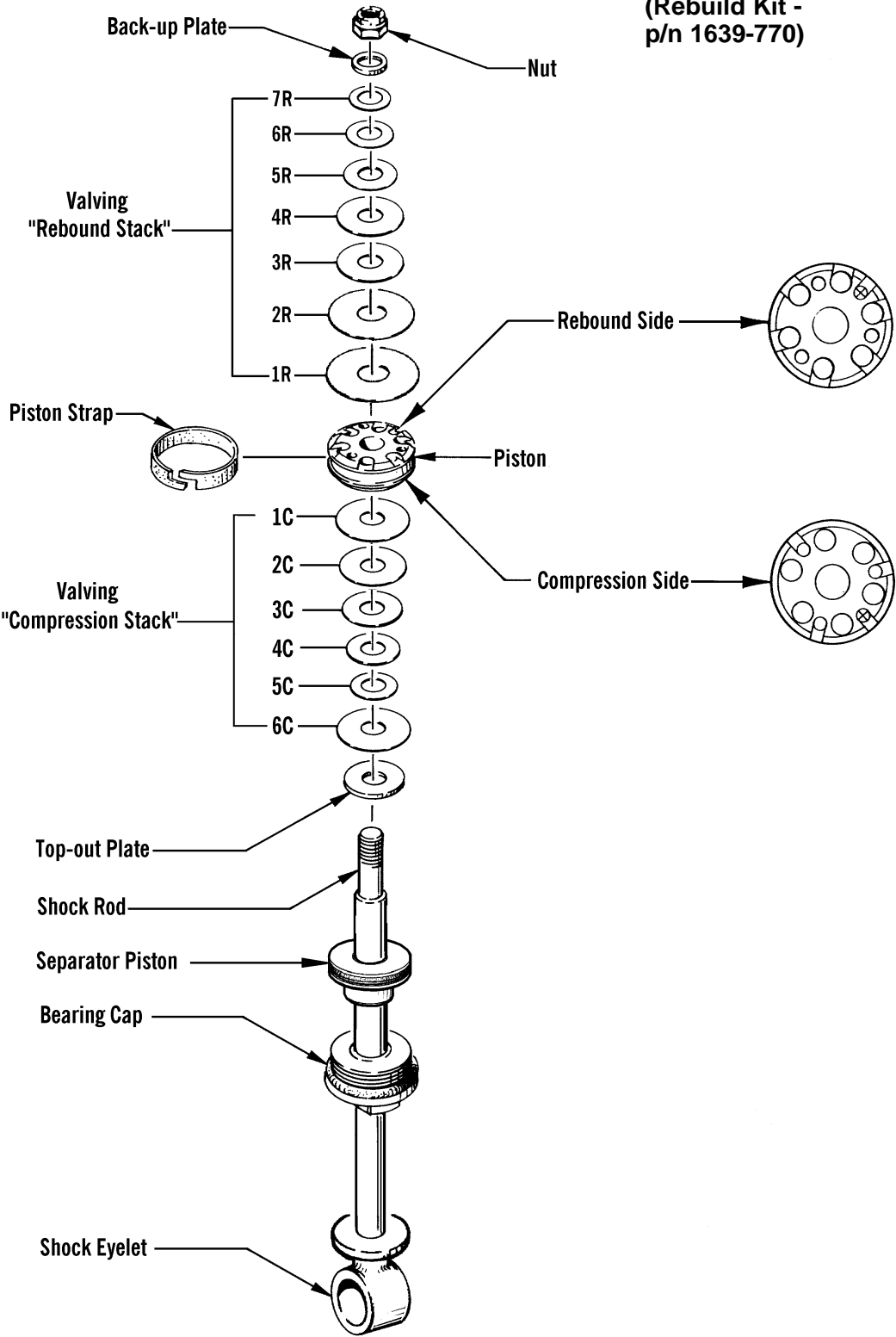
■ NOTE: Rebound and compression valving is rated on a scale of 1 - 4 (1 being the stiffest and 4 being the softest).

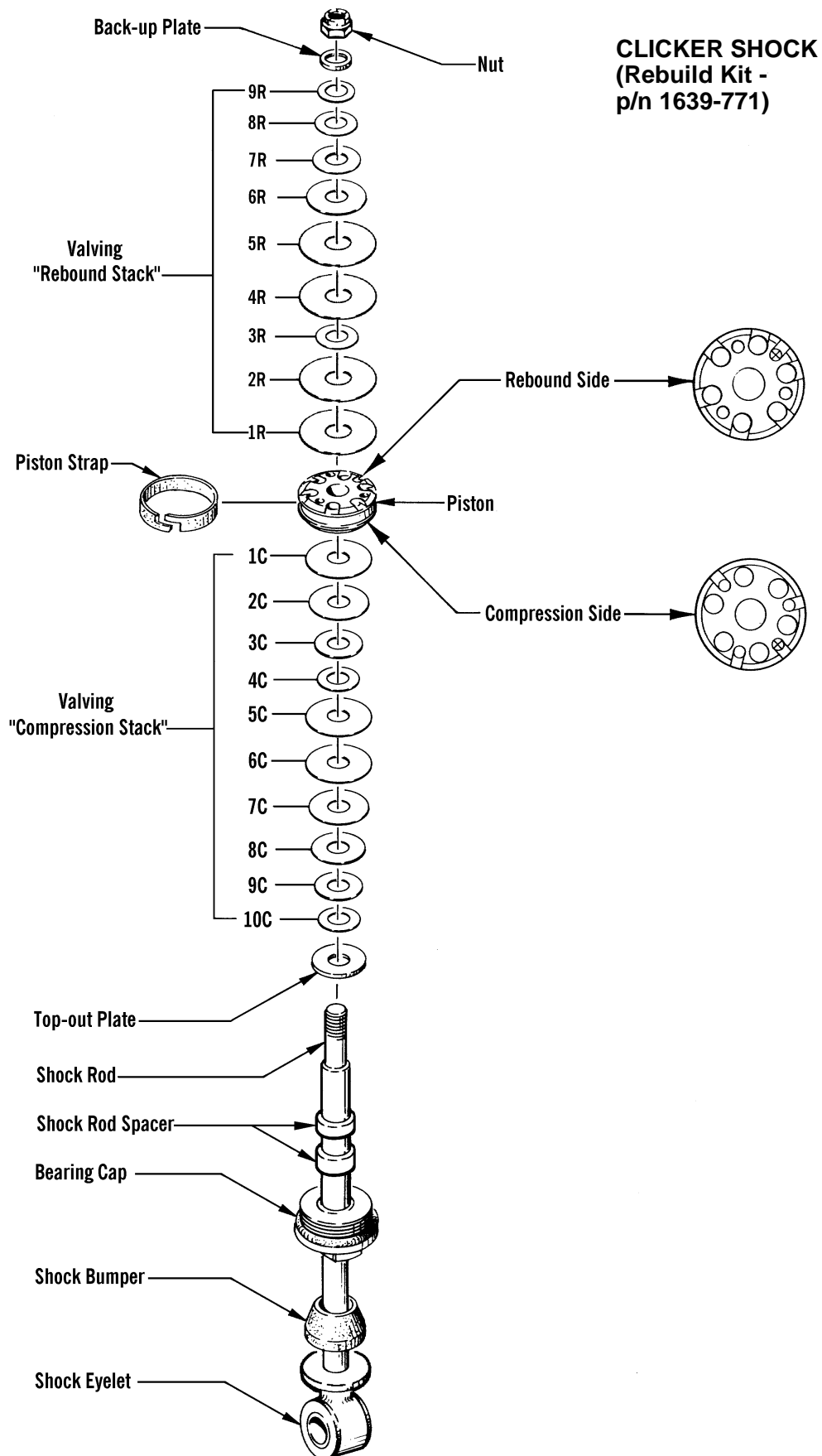
REBUILDABLE SHOCK REVALVING & REBUILDING SCHEMATICS

■ **NOTE:** The following illustrations should be used as a reference for proper placement of the valves and the piston whenever a 2000 Arctic Cat rebuildable shock absorber is disassembled for the purpose of revalving or rebuilding.



**ADJUSTABLE FRONT
ARM SHOCK
(Rebuild Kit -
p/n 1639-770)**





OPTIONAL RIDE KITS

There are two optional ride kits available for the 1997 and 1998 snowmobiles manufactured with Fox shocks. The Consumer Ride kit listed will soften the suspension on the models listed. The Race Ride kits will stiffen the suspension on the models listed. The kits can be ordered from the Arctic Cat Parts Department.

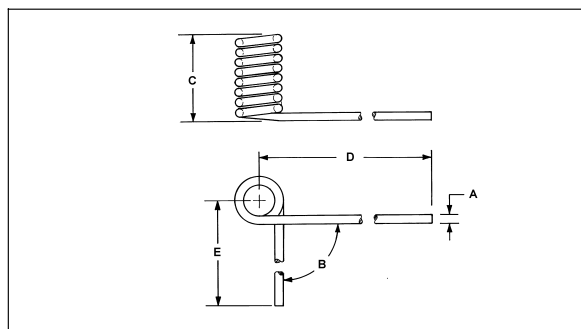
Application	Ride	Part No.
1997 - 1998 ZR 440, 1998 ZR 600 EFI C.C.	Consumer Ride	0639-535
1997 ZR 580, ZRT 600, ZRT 800	Race Ride	0639-534
1998 ZR 500, ZR 600, ZR 600 EFI, ZRT 600, ZRT 800, Thundercat, Powder Special 600 EFI L.E.	Race Ride	0639-961
1998 ZR 440 Sno-Pro	None Available	
2000 ZR 440 Sno-Pro	Consumer Ride	1639-614
All 2000 models equipped w/ACT Shock Absorbers (Except ZR 440 Sno-Pro)	Race Ride	1639-613

ARCTIC CAT REAR SPRING SELECTION CHART

Below is a complete list of rear suspension springs and specifications. This chart was compiled to assist technicians in fine-tuning the Arctic Cat rear suspension when the original springs are not satisfactory and a softer or firmer ride is desired.

If there are any questions concerning the charts usage, please contact the Arctic Cat Inc. Service Department.

Fig. 9-447



0730-218

REAR SUSPENSION SPRINGS						
P/N	Wire Diameter (A)	Angle (B)	Number of Coils	Coil Width (C)	Length (D)	Length (E)
0604-054/053	.406	65°	7.75	3.88	17.500	4.50
0604-118/117	.460	45°	9	4.75	17.500	4.50
0604-132/133*	.437	85°	9	5.030	16.500	5.75
0604-134/135*	.468	85°	9	5.030	16.500	5.75
0604-272/273	.437	90°	9	4.800	17.500	5.50
0604-282/283	.437	75°	9	4.800	17.500	5.50
0604-288/289	.460	60°	9	4.75	17.500	4.50
0604-290/291	.490	60°	9	5.020	17.500	4.50
0604-314/315**	.460	90°	9	5.030	17.500	5.50
0604-400/401	.406	90°	8.75	4.320	17.500	5.50
0604-454/455*	.437	90°	9	4.800	17.500	4.50
0604-474/475	.406	90°	7.75	3.880	17.500	4.50
0604-492/493	.406	90°	8.75	4.320	15.750	5.50
0604-584/585	.406	90°	8.75	4.320	18.100	5.70
0604-592/593	.460	83°	8.75	4.800	15.750	5.50
0604-654/655**	.437	90°	8.75	4.590	20.000	5.70
0604-660/661**	.437	90°	8.75	4.590	18.100	5.70
0604-746/747	.390	90°	8.75	4.320	19.750	5.70
0604-774/775*	.421	90°	8.75	4.430	18.100	5.70
0604-970/971*	.421	90°	8.75	4.430	15.900	5.70
1604-050/051**	.437	83°	8.75	4.590	16.000	5.70
1604-076/077**	.460	97°	9.00	4.530	16.000	5.70
1604-078/079**	.437	83°	8.75	4.56	21.000	5.70
1604-178/179**	.421	77°	8.75	4.52	20.000	6.00
1604-194/195**	.460	90°	8.75	4.53	16.000	6.70
1604-060/061**	.460	77°	8.75	4.85	20.000	5.50
1604-062/063**	.437	75°	8.75	4.60	18.000	5.50
1604-224/225**	.460	83°	8.75	4.53	21.000	5.70
1604-388/389**	.452	75°	8.75	4.60	18.000	5.50
1604-442/443	.452	90°	8.75	4.53	16.000	5.70
1604-067/066	.460	75°	8.75	4.83	18.000	5.50
1604-065/064	.421	75°	8.75	4.45	18.000	5.50
1604-608/609	.437	83°	8.75	4.59	20.750	5.70
1604-149/148***	.460	77°	8.75	4.84	22.000	8.00
1604-381/380***	.452	77°	8.75	4.97	22.000	8.00
1604-146/147***	.421	77°	8.75	4.52	22.000	8.00
1604-144/145***	.437	77°	8.75	4.52	22.000	8.00

*Long leg of spring is bent inward

**Short leg of spring is bent inward

***Must be cut to correct length

■ NOTE: The wire diameter and length of the spring have a large influence over the valving of the shocks.

FRONT SUSPENSION SKI SPRINGS

AWS MODELS

PART NUMBER	WIRE DIAMETER	FREE LENGTH INCHES	RATE LBS/INCH	# OF COILS	TAB
0603-279	.281	9.25	40	10	YES
0603-152	.281	11.35	43-53 Variable	13.5	YES
0603-400	.281	11.35	43-53 Variable	13.5	YES
0603-550	.312	11.75	60	12.5	YES
0603-260	.312	11.35	70	13.5	YES
0603-425	.312	11.35	70	13.5	NO
0603-277	.312	8.75	70-83 Variable	9	YES
0603-426	.331	11.35	80	13.5	NO
0603-430	.331	11.35	80	13.5	YES
0603-278	.328	8.25	85-100 Variable	9	YES
0603-090	.331	10.5	110	11	YES
0603-548	.420	10.5	110	12	NO
0603-663 ¹	.331	10.5	110	11	YES
0603-665 ²	.331	10.5	110	11	YES
0603-709	.330	9.5	110	10	YES
0603-626	.307	9.14	115	9	YES
0603-650	.330	9.14	150	9	YES
0603-860	.312	9.50	110	7.5	YES
0703-482 ²	.312	9.50	110	7.5	YES
0603-836 ²	.306	11.50	80-125 Dual Rate	14	YES
0603-837	.306	11.50	80-125 Dual Rate	14	YES
0603-760	.313	9.15	110	10	NO
0603-602	.280	11.40	70	13	YES
0703-579 ²	.312	8.38	90	9	YES
0703-588 ²	.312	11.50	96	13	YES
0703-592 ²	.331	10.50	90	7.5	YES
0703-597 ²	.331	9.50	110	10.5	YES
0703-598 ²	.331	9.50	110	10.5	YES
0703-599 ²	.312	8.38	90	9	YES
1603-170	.331	10.5	90	7.5	YES
1603-197	.312	8.38	90	9.5	YES
1603-254	.331	9.5	110	10	NO
0703-630 ²	.331	9.5	110	10	NO
0603-718	.312	11.3	110	14	YES
1603-240 ²	.312	11.3	110	14	YES
1603-225	.312	12.25	95	14.9	YES
0703-620		10.50	90		
0703-619 ²	.312	12.25	95	14.9	YES
1603-275 ³	.312	12.61	80-120 dual rate	14.9	YES
1603-239	.281	10.50	90	11.34	YES
0703-620 ²	.281	10.50	90	11.34	YES

¹ Orange Color

² Green Color

³ White Color

AFS MODELS

PART NUMBER	FREE LENGTH INCHES	RATE LBS/INCH
0603-196	2.75	250
0603-021	2.25	350
0603-132	7.25	375
0603-203	2.75	380
0603-127	7.25	420
0603-197	5.35	430
0603-019	5.25	520
0603-020	1.75	750
0603-173	2.00	750
0603-160	2.00	880

FRONT SUSPENSION SWAY BAR

PART NUMBER	DESCRIPTION	APPLICATION
0703-185	3/8 diameter	Powder Special 600 EFI L.E.
0703-202	7/16 diameter	All 1998 Models except Powder Special 600 EFI L.E., Cougar Models, and Panther 550
0703-193	1/2 diameter	1998 Cougar Models and Panther 550
0703-194	5/8 diameter	(Same as 0603-423)
0703-190	Chrome Moly	AWS
0603-024*	5/8 hex	AFS Models
0603-422*	1/2" diameter	1999-2000 Panther 550
0603-254*	7/16" diameter	All 1999-2000 models (AWS)
0603-423*	5/8" diameter	AWS Models I-V (Heavy duty)

* Unpainted

REAR SUSPENSION (Front Arm Springs)

PART NUMBER	FREE LENGTH INCHES	RATE LBS/INCH
0604-216	7.75	100
0604-624	5.0	130*
0604-534	7.0	130
0604-413	7.0	130*
0604-740	7.0	170
0604-658	7.0	170*
0604-587	7.0	250
0604-697	7.1	275
0604-776	6.0	290
0604-005	14	20 ¹
0604-171	15	25 ¹
0604-006	12	150 ¹
1604-125	7.0	220
1604-197	7.0	190
0603-860	9.50	110*
1603-018	9.50	90*
1603-267	8.5	110
1604-509	7.0	160 (.343 wire dia.)**
1604-445	7.0	180 (.360 wire dia.)**

* Tab on Bottom

¹ AFS Models

**This spring only fits shock (p/n 1604-480), non-adjuster sleeve shock

Standard Shock & Spring Chart - 2000 Models

2000 Models	Front Suspension		Rear Suspension				Sway Bar
	Ski Shock	Ski Shock Spring (BLK/GRN)	Front Arm Shock	Front Arm Shock Spring	Rear Arm Shock	Rear Arm Spring (Right/Left)	
BEARCAT 340/440 I	0603-555	0603-426	0604-599	0604-740	0604-659	0604-654/655	N/A
BEARCAT 440 II	0603-555	0603-090	0604-599	0604-587	0604-923	1604-608/609	N/A
BEARCAT WIDE TRACK	1603-393	0603-090	0603-117	0604-587	0604-766	1604-608/609	N/A
PANTERA 580 EFI/1000	1603-175	1603-170	1604-368	0603-860	1604-460	1604-604/605	0603-254
PANTHER 340	1603-174	1603-293/0703-664	1604-369	0603-860	1604-370	1604-388/389	N/A
PANTHER 440	1603-174	1603-293/0703-664	1604-369	0603-860	1604-370	1604-388/389	N/A
PANTHER 550	1603-174	1603-170/0703-592	1604-369	0603-860	1604-460	1604-604/605	0603-422
POWDER SPECIAL 500 EFI/600/600 EFI	1603-264	0603-860/0703-482	1604-369	1603-018	1604-370	1604-062/063	N/A
POWDER SPECIAL 500 EFI LE/600 EFI LE	0703-679	0603-837/836	0704-467	1604-398	0704-468	1604-604/605	0603-254
POWDER SPECIAL 700/700 LE	0703-679	0603-837/836	0704-467	1604-398	0704-468	1604-604/605	0603-254
TRIPLE TOURING 600	1603-175	1603-170/0703-592	1604-368	0603-860	1604-460	1604-604/605	0603-254
Z 370	1603-253	1603-254/0703-630	1604-101	1603-171	1604-455	0604-654/655	N/A
Z 440	1603-253	1603-254/0703-630	1604-101	1603-171	1604-455	0604-654/655	0603-254
ZL Models	1603-175	1603-170/0703-592	1604-369	1603-018	1604-372	1604-062/063	0603-254
ZR 500/500 EFI/600/600 EFI/600 EFI LE (R)/700/700 LE (R)	0703-666	1603-391/392	0704-467	1604-509	0704-468	1604-050/051	0603-254
ZR 600 EFI LE (C)/700 LE (C)	0703-716/717	1603-391/392	0704-470	1604-658	0704-475	1604-442/443	0603-254
ZRT 600	0703-730	0603-718/1603-240	0704-384	0604-658	0704-435	1604-050/051	0603-254
ZRT 800/THUNDERCAT	0703-730	0603-718/1603-240	0704-384	0604-658	0704-450	1604-388/389	0603-254
THUNDERCAT M/C	0703-679	0603-718/1603-240	0704-467	1603-398	0704-468	1604-604/605	0603-254

Optional Rear Arm Spring Chart - 2000 Models

Existing Spring	Optional Spring (Right/Left)
1604-388/389	L 1604-062/063 H 1604-060/061*
0604-654/655	L 1604-178/179 H 1604-060/061
1604-062/063	L 0604-774/775** H 1604-388/389
1604-050/051	L 0604-970/971 H 1604-076/077

* May have to shorten both legs of the spring.

** May have to shorten the short leg of the spring.

■ **NOTE:** L = Light H = Heavy

REBUILDABLE SHOCK PISTON DEPTH CHART

Model	Front Ski Suspension	Rear Suspension Front Arm	Rear Suspension Rear Arm
1996 ZR 440	1.360" (34.54 mm)	3.0"-3.5" (76.20-88.90 mm)	0.700" (17.78 mm)
1996 ZR 580	0.730" (18.54 mm)	0.600" (15.24 mm)	0.765" (19.43 mm)
1996 ZR 580 ETT	2.300" (58.42 mm)	3.0"-3.5" (76.20-88.90 mm)	0.700" (17.78 mm)
1996 ZRT 600	0.800" (20.32 mm)	0.600" (15.24 mm)	0.765" (19.43 mm)
1996 ZRT 800	0.730" (18.54 mm)	0.600" (15.24 mm)	0.765" (19.43 mm)
1997 ZR 440	1.360" (34.54 mm)	3.0"-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1997 ZR 580	0.800" (20.32 mm)	0.600" (15.24 mm)	0.720" (18.29 mm)
1997 ZRT 600	0.800" (20.32 mm)	0.600" (15.24 mm)	0.720" (18.29 mm)
1997 ZRT 800	0.800" (20.32 mm)	0.600" (15.24 mm)	0.720" (18.29 mm)
1998 ZR 440 (Consumer Model)	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1998 ZR 500	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 ZR 600	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 ZRT 600	0.800" (20.32 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 ZRT 800	0.800" (20.32 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 Thundercat	0.800" (20.32 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 Thundercat M/C	0.800" (20.32 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 Powder Special EFI L.E.	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1998 ZR 600 EFI C.C.	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1999 Powder Special 600 EFI LE	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 Powder Special 700 LE	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 500	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 500 EFI	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 600	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 600 EFI	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 700	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZRT 600	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 Powder Special 700	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 Thundercat	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZRT 800	0.950" (24.13 mm)	0.650" (16.51 mm)	0.720" (18.29 mm)
1999 ZR 500 LE	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1999 ZR 500 EFI LE	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1999 ZR 600 LE	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
1999 ZR 600 EFI LE	1.360" (34.54 mm)	3.0-3.5" (76.20-88.90 mm)	0.720" (18.29 mm)
2000 Powder Special 500 EFI LE/ 600 EFI LE	0.950" (24.13 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 Powder Special 700/700 LE	0.950" (24.13 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 500	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 500 EFI	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 600	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 600 EFI/600 EFI LE (R)	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 700/700 LE (R)	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZRT 600	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 Thundercat	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 Thundercat M/C	0.880" (22.35 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZRT 800	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 700 LE (C)	1.365" (34.67 mm)	3.000" (76.20 mm)	0.800" (20.32 mm)
2000 ZR 600 VEV	1.250" (31.75 mm)	0.650" (16.51 mm)	0.800" (20.32 mm)
2000 ZR 600 SE	1.365" (34.67 mm)	3.000" (76.20 mm)	0.800" (20.32 mm)
2000 ZR 600 EFI LE (C)	1.365" (34.67 mm)	3.000" (76.20 mm)	0.800" (20.32 mm)

REBUILDABLE SHOCK TOOLS REQUIRED

0644-268	Shock Bearing Cap Installation Tool
0644-057	Shock Spring Removal Tool
0644-158	Shock Inflation Needle
0644-142	Gas Shock Retaining Blocks
0644-162	Replacement Needle
0644-169	Shock Piston Location Tool
0644-151	Nitrogen Regulator
0644-277	Shock Rod Clamping Tool

REBUILDABLE SHOCK REBUILD KITS

1639-769	IFP
1639-770	Front Arm Quick-Adjust
1639-771	Clicker Shock

2000 VALVE STACKS

Thundercat, ZRT 600, ZRT 800, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse)

Ski Suspension Shock (p/n 0703-666)

Compression:	Rebound:
11. 1.125 x .010	1. 1.250 x .006
10. .800 x .010	2. 1.250 x .006
9. .900 x .010	3. .900 x .006
8. 1.000 x .008	4. 1.250 x .008
7. 1.100 x .008	5. 1.250 x .008
6. 1.250 x .006	6. 1.100 x .010
5. 1.250 x .006	7. 1.000 x .010
4. .700 x .008	8. .900 x .010
3. .900 x .006	9. .800 x .010
2. 1.100 x .006	10. .620 x .094
1. 1.300 x .006	

Piston Orifice .093 in.

Thundercat, Thundercat M/C, ZRT 600, ZRT 800, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse), Powder Special Models

Front Arm Track Suspension Shock (p/n 0704-467)

Compression:	Rebound:
7. 1.125 x .094	1. 1.250 x .010
6. 1.250 x .010	2. 1.100 x .010
5. .800 x .010	3. 1.000 x .010
4. .900 x .010	4. 1.000 x .010
3. 1.000 x .012	5. .900 x .010
2. 1.100 x .012	6. .800 x .010
1. 1.300 x .012	7. .700 x .010
	8. .620 x .094

Piston Orifice .059 in.

ZRT 600, ZR 500, ZR 500 EFI, ZR 600, ZR 600 EFI, ZR 600 EFI LE (Reverse), ZR 700, ZR 700 LE (Reverse), Powder Special Models

Rear Arm Track Suspension Shock (p/n 0704-468)

Compression:	Rebound:
8. 1.125 x .094	1. 1.250 x .010
7. .900 x .010	2. 1.250 x .010
6. 1.000 x .010	3. 1.100 x .010
5. 1.100 x .010	4. 1.000 x .010
4. 1.250 x .010	5. .900 x .010
3. .900 x .010	6. .800 x .010
2. 1.000 x .010	7. .620 x .094
1. 1.300 x .006	

Piston Orifice .046 in.

Thundercat M/C

Ski Suspension Shock (p/n 0703-679)

Compression:	Rebound:
11. 1.125 x .094	1. 1.250 x .006
10. .800 x .010	2. 1.250 x .006
9. .900 x .010	3. .900 x .006
8. 1.000 x .008	4. 1.250 x .008
7. 1.100 x .008	5. 1.250 x .008
6. 1.250 x .006	6. 1.100 x .010
5. 1.250 x .006	7. 1.000 x .010
4. .700 x .004	8. .900 x .010
3. .900 x .008	9. .800 x .010
2. 1.100 x .008	10. .620 x .094
1. 1.300 x .006	

Piston Orifice .093 in.

ZR 600 EFI LE (Clicker), ZR 700 LE (Clicker)

Front Arm Track Suspension Shock (p/n 0704-470)

Compression:	Rebound:
7. 1.250 x .094	1. 1.250 x .010
6. 1.250 x .010	2. 1.100 x .010
5. .800 x .010	3. 1.000 x .010
4. .900 x .010	4. 1.000 x .010
3. 1.000 x .012	5. .900 x .010
2. 1.100 x .012	6. .800 x .010
1. 1.300 x .012	7. .700 x .010
	8. .620 x .094

Piston Orifice .059 in.

Thundercat, Thundercat M/C, ZRT 800

Rear Arm Track Suspension Shock (p/n 0704-469)

Compression:	Rebound:
8. 1.125 x .094	1. 1.250 x .010
7. .900 x .010	2. 1.250 x .010
6. 1.000 x .010	3. 1.100 x .010
5. 1.100 x .010	4. 1.000 x .010
4. 1.250 x .010	5. .900 x .010
3. .900 x .010	6. .800 x .010
2. 1.000 x .010	7. .620 x .094
1. 1.300 x .006	

Piston Orifice .041 in.

ZR 600 EFI LE (Clicker), ZR 700 LE (Clicker)

Ski Suspension Shock (p/n 0703-716-R & 717-L)

Compression	Rebound:
11. 1.250 x .094 (L)	1. 1.250 x .006
1.125 x .094 (R)	2. 1.250 x .006
10. .800 x .010	3. .900 x .006
9. .900 x .010	4. 1.250 x .008
8. 1.000 x .008 (L)	5. 1.250 x .008
1.100 x .008 (R)	6. 1.100 x .010
7. 1.100 x .008	7. 1.000 x .010
6. 1.250 x .006	8. .900 x .010
5. 1.250 x .006	9. .800 x .010
4. .700 x .008	10. .620 x .094
3. .900 x .006	
2. 1.000 x .006	
1. 1.300 x .006	

Piston Orifice .093 in.

ZR 600 EFI LE (Clicker), ZR 700 LE (Clicker)

Rear Arm Track Suspension Shock (p/n 0704-475)

Compression:	Rebound:
8. 1.250 x .094	1. 1.250 x .010
7. .900 x .010	2. 1.250 x .010
6. 1.000 x .010	3. 1.250 x .010
5. 1.100 x .010	4. 1.100 x .010
4. 1.250 x .010	5. 1.000 x .010
3. .900 x .010	6. .900 x .010
2. 1.000 x .010	7. .800 x .010
1. 1.300 x .008	8. .620 x .094

Piston Orifice .041 in.

Powder Special 500 EFI LE, Powder Special 600 EFI LE, Powder Special 700, Powder Special 700 LE

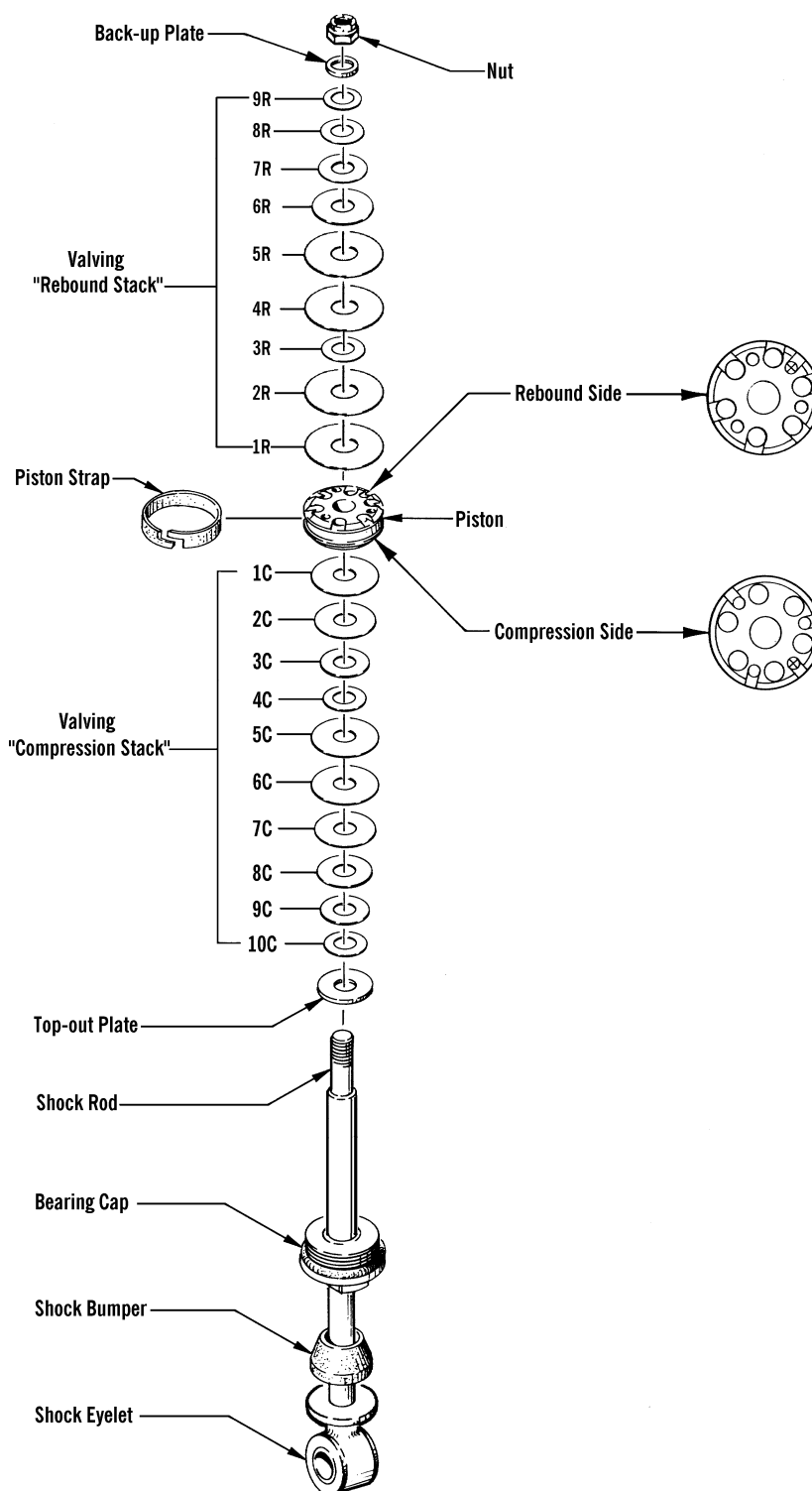
Ski Suspension Shock (p/n 0703-672)

Compression:	Rebound:
10. 1.125 x .094	1. 1.250 x .006
9. .800 x .010	2. 1.250 x .008
8. .900 x .010	3. 1.250 x .006
7. 1.000 x .008	4. 1.250 x .008
6. 1.100 x .008	5. 1.100 x .008
5. 1.250 x .006	6. 1.000 x .010
4. 1.250 x .008	7. .900 x .010
3. .900 x .010	8. .800 x .010
2. 1.100 x .010	9. .620 x .094
1. 1.300 x .008	

Piston Orifice .093 in.

Servicing I.F.P. Style Shocks

■ **NOTE:** The following illustration should be used as a reference for proper placement of the valves and the piston whenever a rebuildable shock is disassembled for the purpose of revalving or rebuilding.



WARNING

Before servicing a gas shock absorber, first discharge all pressure from the shock. Remove the screw from the bottom of the shock and insert the Shock Inflation Needle (p/n 0644-158). Open valve until all pressure is released. Failure to do this may cause personal injury.

DISASSEMBLING

1. Remove the shock from the snowmobile.
2. Wash the shock body in parts cleaner; then dry with compressed air to remove sand and dirt.

WARNING

When using compressed air to dry components, always wear safety glasses.

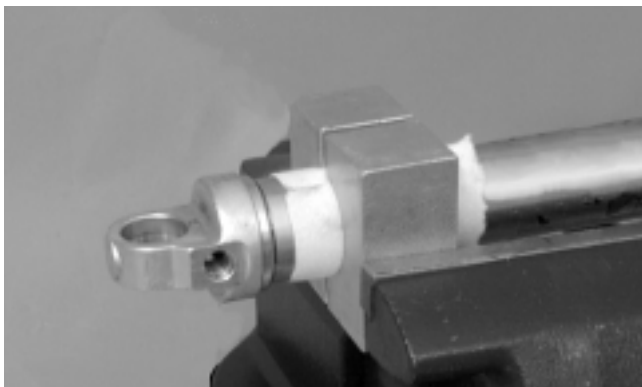
3. Place the shock into the Gas Shock Retaining Blocks (p/n 0644-142); then remove shock eyelet mounting axle and bushings from end cap.

CAUTION

It is important that the Gas Shock Retaining Blocks (p/n 0644-142) are used during both disassembly and assembly. Any other method of securing the shock body during these procedures may deform the shock body cylinder.

■ **NOTE:** A paper shop towel between the shock body and retaining blocks will help prevent scuffing of the shock body.

Fig. 9-448



AP110DA

4. Remove the screw from the bladder housing on the bottom of the shock. Discharge all the pressure from the shock using the Shock Inflation Needle (p/n 0644-158). Open the valve in filler handle until all pressure is released.

Fig. 9-449



AG335

5. Using a 9/16-in. wrench, remove the brass bladder housing from the lower end cap. Account for an O-ring.

Fig. 9-450

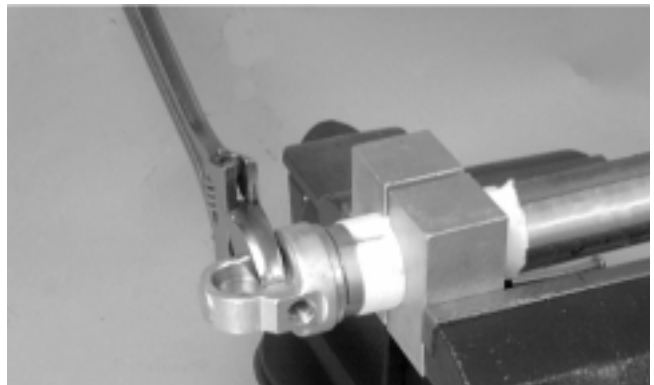


AP014

6. Using a large adjustable wrench (12-in. or 14-in.), remove the end cap.

■ **NOTE:** 1994 and older shocks have Loctite on the lower end cap. Heating the lower end cap may be necessary. Use care not to overheat.

Fig. 9-451

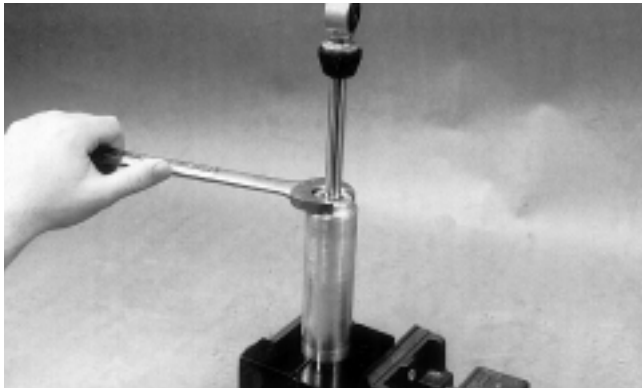


AP016DA

7. Using a 1-in. open end wrench, loosen the shock shaft bearing cap a couple of turns.

■ **NOTE:** Do not remove the bearing cap at this time.

Fig. 9-452



AP026

8. Turn the shock so that the open end is up. Then remove the Allen-head screw located in the center of the floating piston. Account for a small O-ring.

Fig. 9-453



AP022

9. Using a pair of pliers, pull the floating piston assembly out of the shock body. Account for a piston ring and an O-ring.
10. Pour the oil out of the shock body.
11. Unscrew the shaft bearing cap and lift the shaft assemble from the shock body.

Fig. 9-454



AP027

12. Clean the inside of the shock body using clean parts-cleaning solvent. Blow dry using compressed air.

■ **NOTE:** Do not lay shock parts on a rag as it may transfer lint to the parts causing internal shock problems.

⚠ WARNING

When using compressed air to dry components, always wear safety glasses.

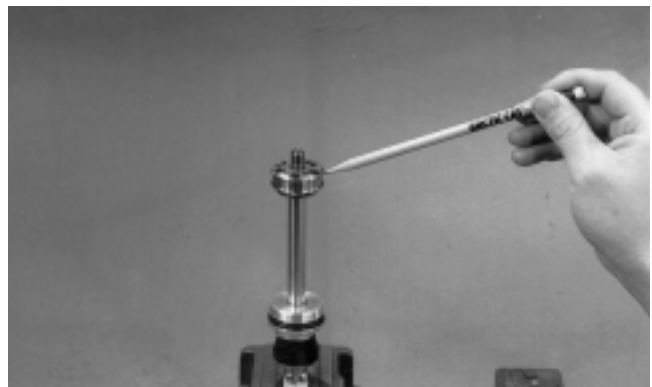
13. Remove the piston ring from the piston. Loosen (but do not remove) the lock nut from the bottom of the shock shaft; then clean the piston area with clean parts-cleaning solvent to remove dirt or foreign material from between the valves. Dry the piston and valves completely using compressed air.

⚠ WARNING

When using compressed air to dry components, always wear safety glasses.

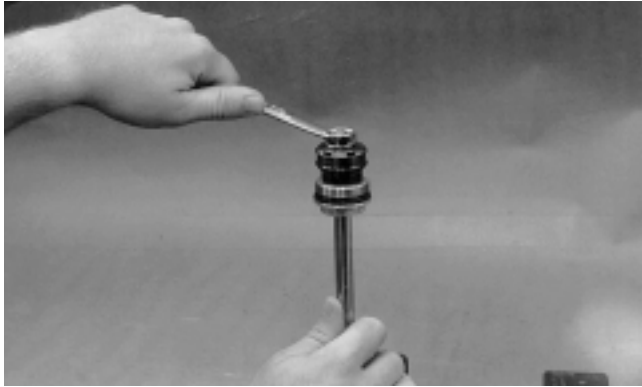
■ **NOTE:** If for some reason the piston must be removed from the shock shaft, it must be installed with its large seven slots located next to the lock nut side of the shock shaft.

Fig. 9-455



AP051

Fig. 9-456



AP028

■ **NOTE:** If shock valving must be removed for cleaning, remove all valving as a complete assembly and place on a 5/16 x 3-in. cap screw to keep in proper order. Note which side is the top side for assembly purposes.

Fig. 9-457



AP032

14. Items to inspect:

- A. Shock shaft for straightness, nicks, or burrs.
- B. Shaft bearing end cap — clean, inspect, or replace.
- C. Inside of shock body for scratches, burrs, or excessive wear.
- D. Piston rings for cuts, chipped or nicked edges, or excessive wear.
- E. O-rings for nicks, cuts, or cracks.
- F. Valves for kinks or waves.
- G. Rubber damper (ski shocks only) for chipping, cracking, or being missing.

15. Items to replace:

- A. Bleed screw O-ring on the floating piston.
- B. Shock shaft bearing cap if any signs of oil leaks or damage.
- C. Any part worn or damaged.

■ **NOTE:** For shaft, shaft eyelets, or shaft bearing cap replacement, see Shaft Eyelet or Bearing Cap and Shaft Seal sub-section.

ASSEMBLING

1. Place the shock shaft eyelet into the vise; then assemble valves and piston and tighten the lock nut to 2.1-2.8 kg-m (15-20 ft-lb).

CAUTION

DO NOT OVER-TIGHTEN. If excessive torque is applied, damage to the piston and valves will occur.

2. Place the shock body between the two Gas Shock Retaining Blocks (p/n 0644-142) and secure in a vise.

CAUTION

It is important that the Gas Shock Retaining Blocks (p/n 0644-142) are used during both disassembly and assembly. Any other method of securing the shock body during these procedures may deform the shock body cylinder.

3. Apply a light coat of oil on the O-ring and piston ring and install piston into shock body.

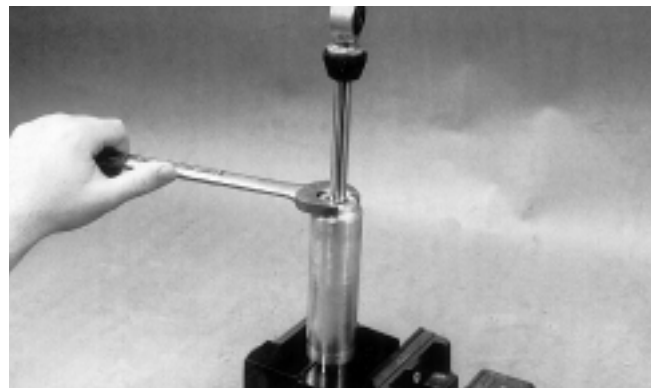
Fig. 9-458



AP033

4. Place the shaft bearing cap into the body and tighten securely.

Fig. 9-459



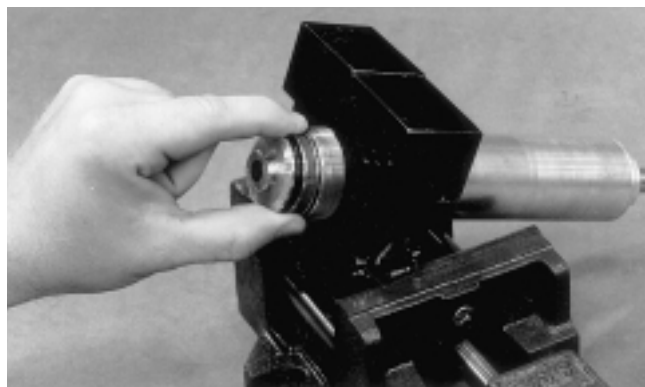
AP026

5. Loosen vise and reposition the shock body and retaining blocks so the bottom of the shock body is “up” and in a vertical position. Extend the shock shaft fully and fill the shock body with Shock Oil (p/n 0636-664) to within 1-1 1/2-in. from the top.
6. Slowly move the shock shaft up and down a few times keeping the piston under oil at all times. This is to remove the air from under the piston. Extend the shock shaft fully; then fill the shock body with oil to within 1/2-3/4-in. from the top.

■ **NOTE:** After filling the shock body with oil, allow 5 minutes for all air bubbles to rise to the top.

7. Apply a light coat of oil on the floating piston ring and O-ring and install the floating piston in the shock body.

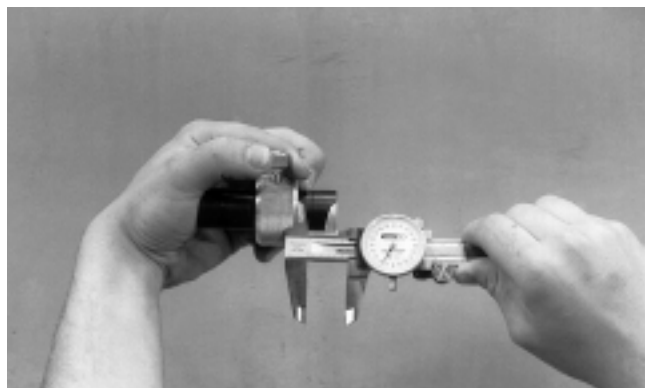
Fig. 9-460



AP023

■ **NOTE:** Depending on which shock absorber is being worked on, adjust the piston location tool to the specification indicated in piston depth chart (see page 9-149).

Fig. 9-461



AP050

8. Attach the Shock Piston Location Tool (p/n 0644-169) to the piston by placing its slotted end over the flats on the top of the piston and giving the tool a quarter turn. Pull gently on the tool to make sure it is secure to the piston.

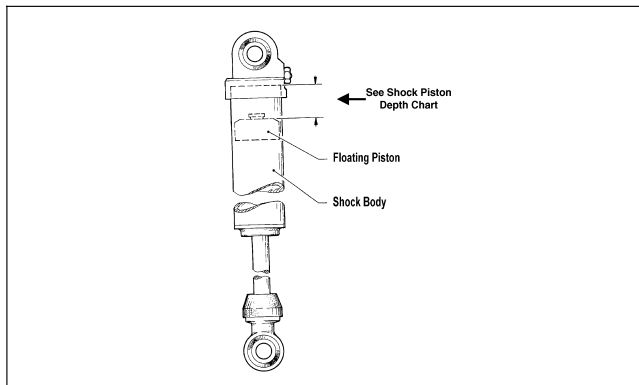
Fig. 9-462



AG339

9. Using the tool as a handle, push the piston down into the shock body until the adjustment knob comes in contact with the shock body. Give the tool a quarter turn to free it from the piston. The piston should now be located correctly.

Fig. 9-463



729-085C

■ **NOTE:** As the floating piston is pushed into the shock absorber body, air and excess oil will come out through the hole in the piston. If no oil comes out through the hole in the piston, remove the piston and add more oil to the shock body.

10. Install the Allen-head screw and O-ring into the bottom of the floating piston. While securing the piston with a 9/16-in. wrench, tighten the Allen-head screw.

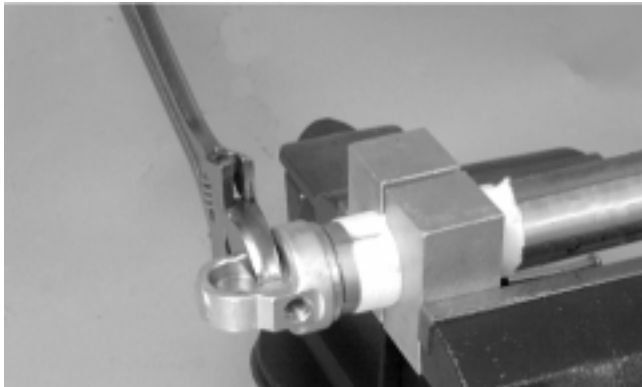
Fig. 9-464



AP020

11. Pour out the excess oil from the shock body.
12. Install the lower end cap on the shock body.
13. Using Shock Retaining Blocks (p/n 0644-142) to hold the shock in place and using an adjustable wrench, tighten the end cap securely.

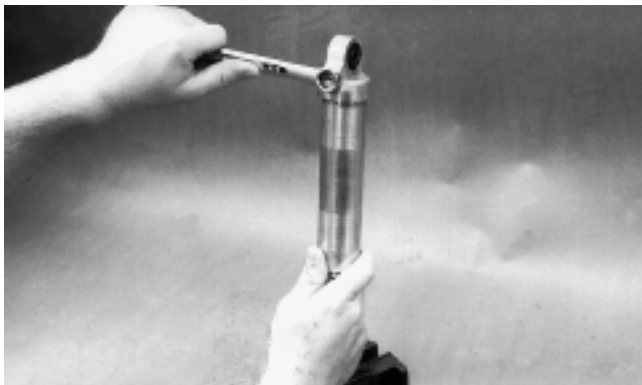
Fig. 9-465



AP016DA

14. Apply a light coat of oil on the bladder housing O-ring; then install the brass bladder housing into the lower end cap. Tighten securely.

Fig. 9-466



AP014

15. Pressurize the shock (see Pressurizing Rebuildable Shocks sub-section). After shock has been pressurized, install screw into bladder housing. Tighten securely.
16. Install shock eyelet bushings and axle.

Servicing Front Arm Quick-Adjust Shock

REMOVING

1. Remove the shock from the snowmobile.

■ **NOTE:** When removing the shock from the snowmobile, it will be necessary to disconnect the adjuster assembly. Before disconnecting the adjuster, the adjustment knob must be turned completely open (counterclockwise) so there is no pressure on the line. To prevent oil spillage, place a protective cap on the hose end.

2. Wash the shock body in parts-cleaning solvent; then dry with compressed air to remove sand and dirt.

Fig. 9-467



AG807

⚠ WARNING

When using compressed air to dry components, always wear safety glasses.

DISASSEMBLING

⚠ WARNING

Before any work can be performed on the gas shock absorber, first discharge all pressure from the shock remote reservoir. Remove the valve screw from the pressure valve and insert the Shock Inflation Needle (p/n 0644-158). Open valve until all pressure is released. Failure to do this may cause personal injury.

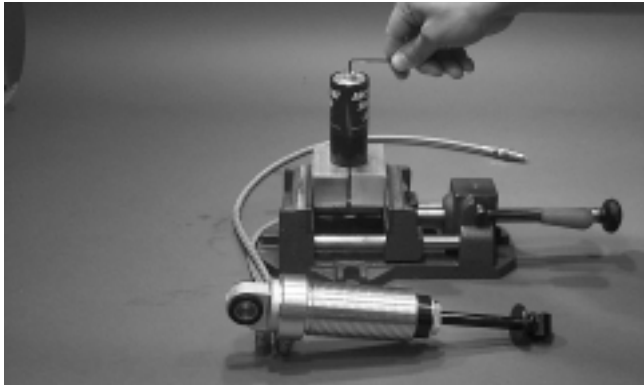
1. Using the Shock Retaining Blocks (p/n 0644-142), place the remote reservoir in a vise.

Fig. 9-468



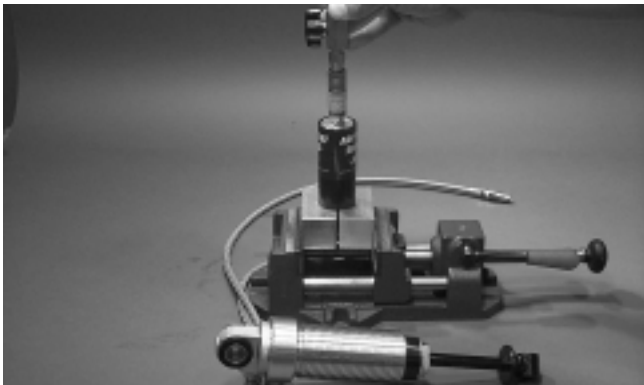
2. Remove the valve screw from the pressure valve.

Fig. 9-469



3. Discharge all pressure from the remote reservoir using the Shock Inflation Needle (p/n 0644-158). Open the valve in the filler handle until all pressure is released.

Fig. 9-470



4. Reattach the adjustment knob assembly to the shock adjuster hose.

Fig. 9-471



5. Push the remote reservoir end cap in; then use a sharp tool to remove the circlip. Remove the remote reservoir end cap.

Fig. 9-472



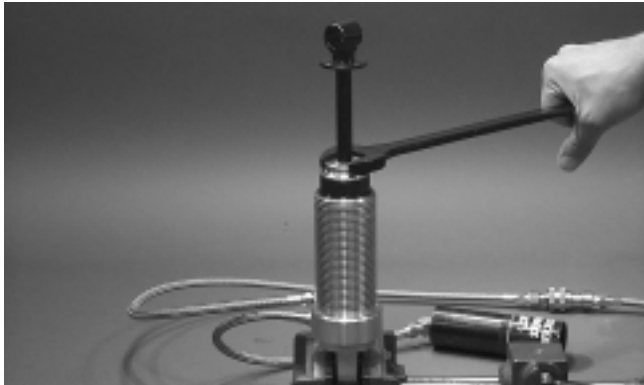
Fig. 9-473



6. Secure the shock body eyelet in a vise; then loosen the shock end cap and carefully remove the shock rod with valving assembly.

■ **NOTE:** If the shock body turns with the upper end cap, the shock body can be removed from the lower end cap; then remove the outer sleeve and place the shock body in the shock blocks. Remove the upper end cap.

Fig. 9-474



AG814

Fig. 9-475



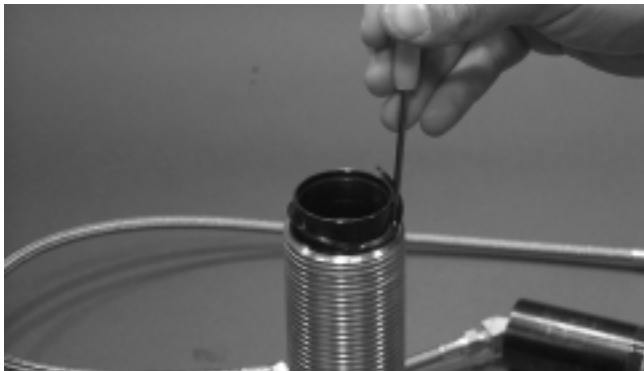
AG815

■ **NOTE:** If for some reason the piston must be removed from the shock shaft, it must be installed with the “Rebound Side” located next to the lock nut of the shock shaft (refer to schematic on page 9-152).

■ **NOTE:** Do not remove the lock nut from the bottom of the shock rod as it is very important the valving on either side of the piston stay in its proper position. If shock valving must be removed for cleaning, remove all valving as a complete assembly and place on a 5/16 x 3-in. cap screw to keep in the proper order. Note which side is the top side for assembly purposes.

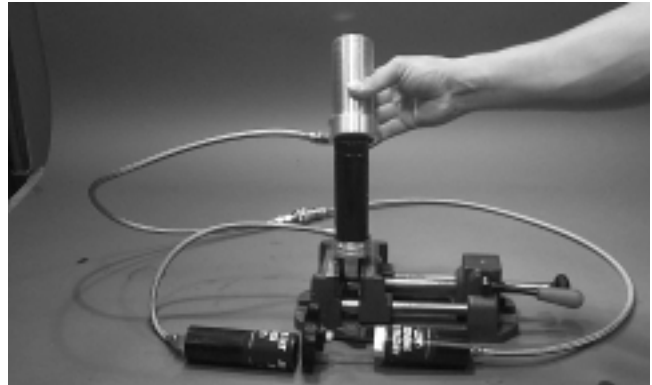
7. Remove the spiral retaining ring from the shock body; then remove the outer threaded sleeve.

Fig. 9-476



AG816

Fig. 9-477

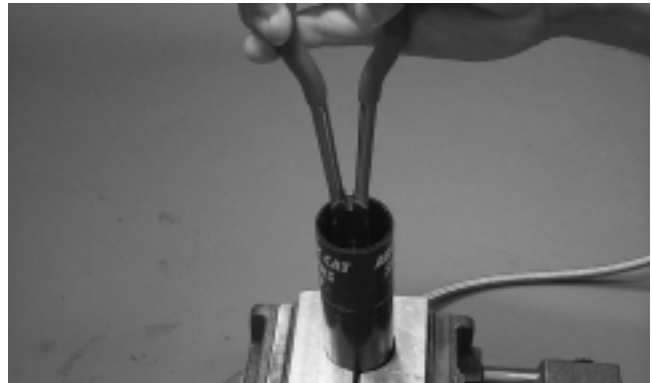


AG817

8. Pour out the excess oil from the shock body.

9. Using a long needle-nose pliers, remove the floating piston from the remote reservoir; then pour out the excess oil from the remote reservoir.

Fig. 9-478



AG818

Fig. 9-479



AG819

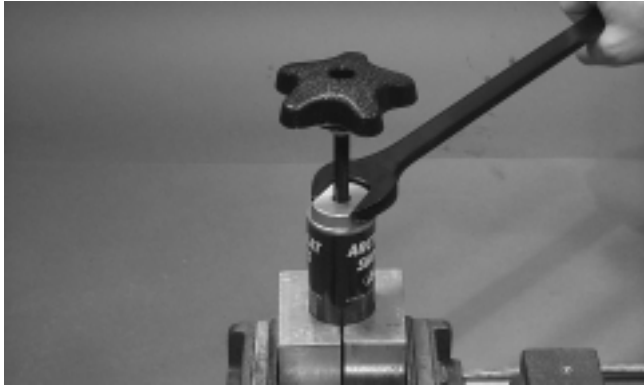
10. Clean the shock body, reservoir, and the outer threaded sleeve with parts cleaner.

DISASSEMBLING/CLEANING/ ASSEMBLING ADJUSTER BODY

1. Disconnect the quick coupler.

2. While securing the adjuster body in a vise with Shock Retaining Blocks (p/n 0644-142), remove the adjuster end cap; then remove the Allen-head screw from the center of the floating piston.

Fig. 9-480



AG820

Fig. 9-481



AG821

3. Using a long needle-nose pliers, remove the floating piston from the adjuster assembly.

Fig. 9-482



AG822

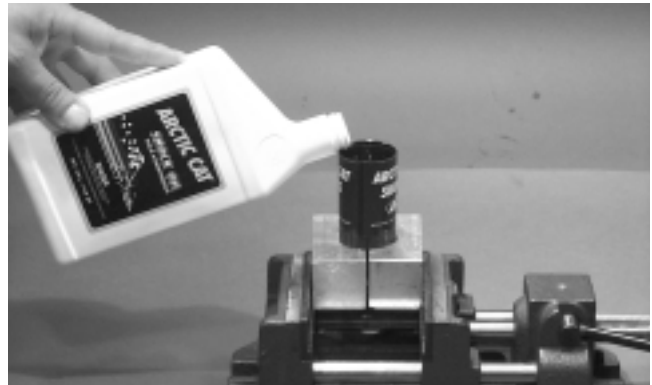
4. Pour out the oil from the adjuster body.
5. Clean all components thoroughly; then use compressed air to dry.

⚠ WARNING

When using compressed air, always wear a good pair of safety glasses.

6. Using the retaining blocks, secure the adjuster body in a vise.
7. Pour oil into the adjuster body until it reaches the bottom of the threads; then using a suitable tool, push in on the spring-loaded valve in the coupler assembly to remove any air in the coupler fitting and hose. Add oil to reach the bottom of the threads. Allow time for air bubbles to dissipate.

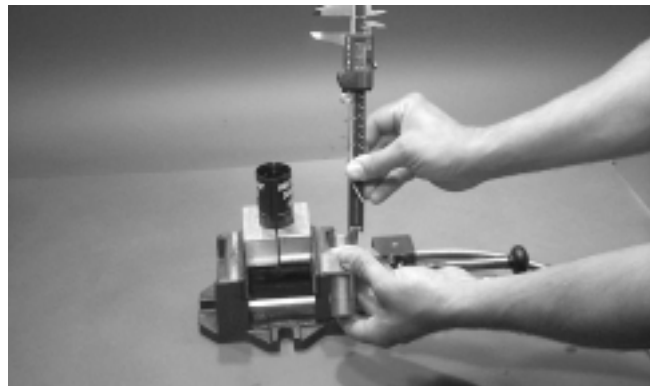
Fig. 9-483



AG823

8. Adjust the piston location tool to 13.2 mm (0.520 in.) for 1994-1996 models and to 16.8 mm (0.660 in.) for 1997-2000 models.

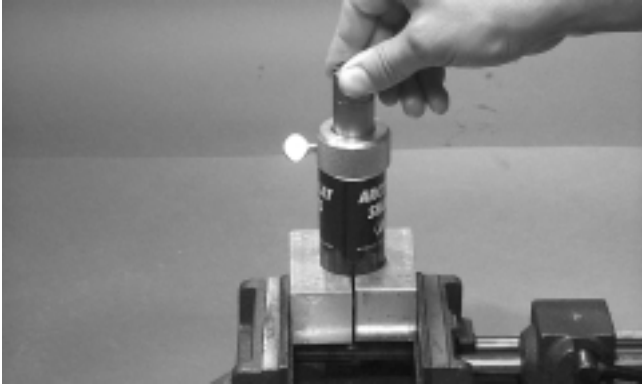
Fig. 9-484



AG824

9. Using a good low-temperature grease, lightly grease the O-ring of the floating piston.
10. Using a long needle-nose pliers, insert the floating piston into the adjuster body until the piston is flush with the top of the body.
11. Using the piston location tool as a handle, push the piston down into the adjuster body until the adjustment stop of the tool comes in contact with the adjuster body. The piston should now be located correctly.

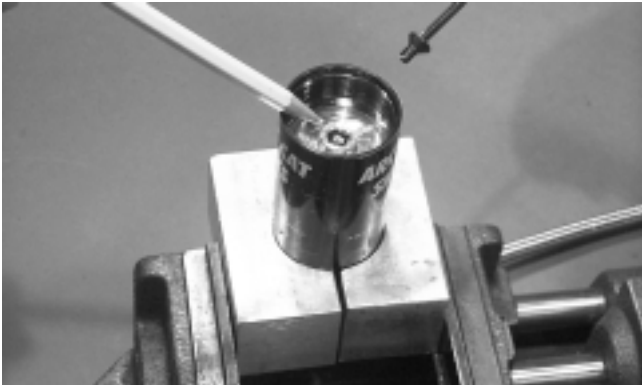
Fig. 9-485



AG825

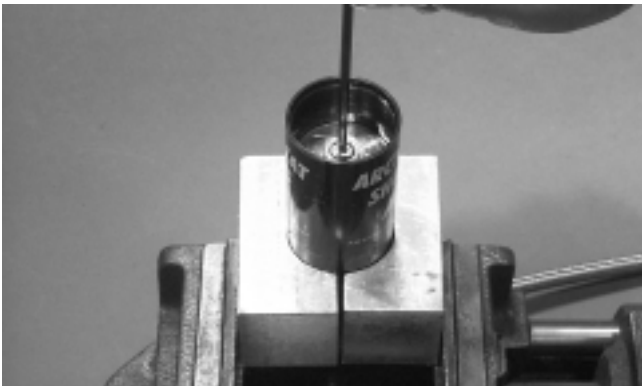
12. Install the Allen-head screw with a new O-ring into the floating piston; then tighten securely.

Fig. 9-486



AG826

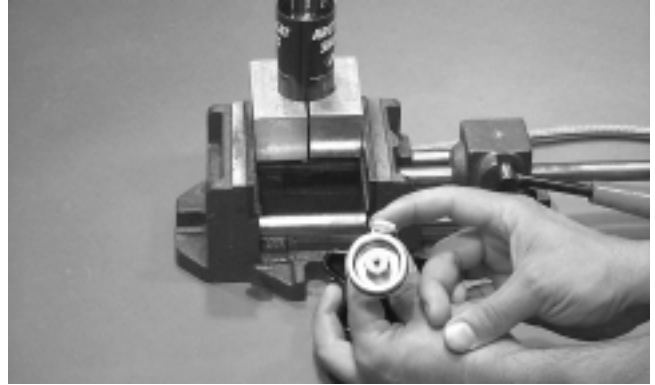
Fig. 9-487



AG827

13. Pour out the excess oil from the adjuster assembly; then grease the tip of the floating piston adjuster screw using a good quality grease.

Fig. 9-488



AG828

14. Install the adjuster handle making sure the handle is turned out (counterclockwise) completely. Tighten securely.

Fig. 9-489



AG829

Fig. 9-490



AG830

15. There must be a 1/4 to 1 turn of free-play on the handle. If handle free-play is not within specifications, repeat steps 7-11.

CLEANING AND INSPECTING

1. Inspect all hoses for cracks, kinks, or signs of damage; then clean all hoses and shock components of any contaminated oil.
2. Inspect all shock and reservoir surfaces for signs of damage.

■ **NOTE:** All cleaning fluids must be removed completely before assembling to avoid contamination of the oil.

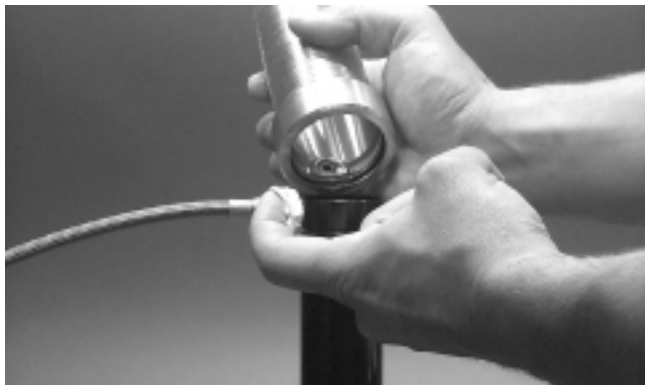
3. Inspect all O-rings for cracks or damage. It is recommended that all O-rings be replaced with new O-rings any time the shock is disassembled.
4. Clean all parts; then lay all parts on a clean newspaper.

ASSEMBLING SHOCK AND REMOTE RESERVOIR

■ **NOTE:** When assembling the shock, it is recommended to replace old O-rings with new O-rings. There is a Shock Rebuild Kit (p/n 0637-101) that contains all the necessary O-rings for rebuilding the front arm quick-adjust shock.

1. Secure the shock body in a vise by the lower end cap eyelet.
2. Lightly grease the shock body and the O-rings on the outer threaded sleeve; then install the outer threaded sleeve making sure the fitting on the outer threaded sleeve aligns with the fitting on the shock body.

Fig. 9-491



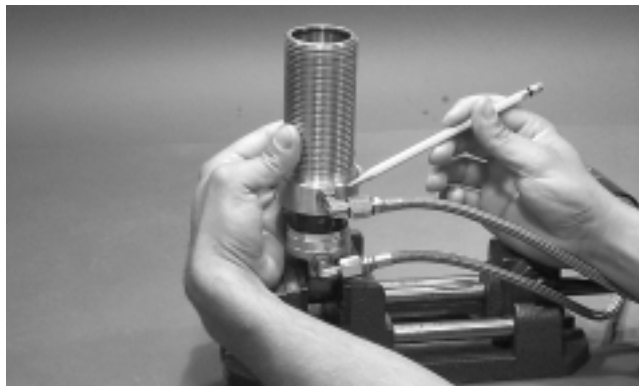
AG831

Fig. 9-492



AG832

Fig. 9-493



AG833

3. Install the spiral retainer on the shock body making sure the retainer seats in the retainer groove.
4. While holding the remote reservoir above the shock body with the hose free of any low spots, fill the remote reservoir with new shock oil until oil flows free of air bubbles into the shock body.

Fig. 9-494



AG834

5. Position the remote reservoir below the shock body; then fill the remote reservoir to the top with new shock oil. Allow time for air bubbles to dissipate.
6. Install the floating piston with the Allen-head screw installed in piston. Push piston in until flush with top of reservoir body; then let reservoir and hose hang down from shock for a few minutes to let any air work up and out of the shock. Push the floating piston all the way into the reservoir. The shock may overflow with oil. Pull the floating piston back 2 inches and push back down a couple of times while keeping the open end of the reservoir down and below the shock body. This will remove all the air from the reservoir and hose.

Fig. 9-495



AG849

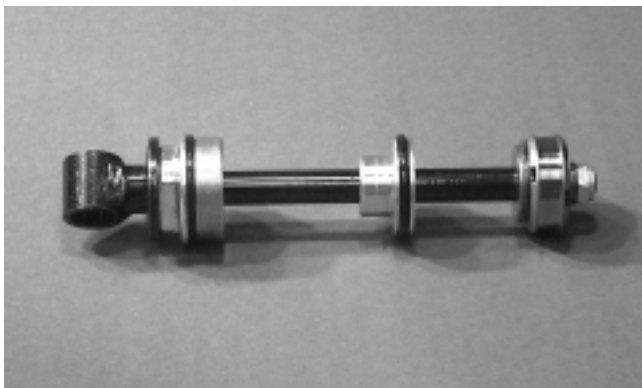
■ **NOTE:** Assembling this shock results in oil overflowing several times. This is necessary to remove air from the system.

7. With the floating piston pushed to the bottom of the reservoir, finish filling the shock body with new shock oil to the bottom of the threads. Allow time for all air bubbles to dissipate; then angle the shock body slightly in the vise.
8. Lightly grease the threads of the shock body and the piston adjuster O-ring.

■ **NOTE:** You may proceed with a few small air bubbles coming from the orifices near the top of the shock.

9. Set the adjuster piston 1 to 1 1/2 in. from valving piston while holding the end cap at the top.

Fig. 9-496



AG835

10. To install the shock rod, align the valve piston wear ring end gap with the low-speed orifice cutaway positioning the cutaway so it faces the upward angle of the shock body which will allow air to escape. Install the valving piston by pushing on the shaft eyelet while guiding the piston ring into the shock body. Push the piston to bottom of the threads on the inside shock body.

Fig. 9-497



AG836

11. Allow air to dissipate; then stand shock straight up and fill with oil. Install adjuster piston by pushing down on adjuster piston until it is just past the orifice in the shock body.

Fig. 9-498



AG837

Fig. 9-499



AG838

■ **NOTE:** When installing the adjuster piston, push down only on the adjuster piston. Do not push down on the shock eyelet.

12. Pour oil into the coupler female end; then connect hose from the shock body to the adjuster assembly.

Fig. 9-500

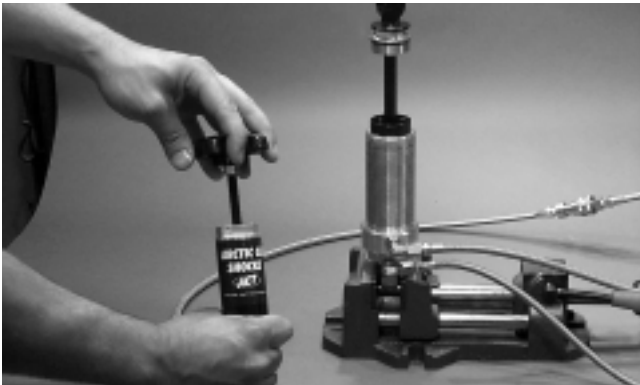


AG839

13. While keeping the adjuster and hose below the shock, turn the adjuster knob in (clockwise) until oil reaches the top of the shock body free of air bubbles; then back the adjuster knob off.

■ **NOTE:** The adjuster knob must remain connected and backed out through the remaining procedure until the shock has been pressurized; otherwise, the oil will be trapped on top of the adjuster piston and the shock rod will appear to be short and the shock will not function properly.

Fig. 9-501



AG840

14. While holding the shock eyelet to prevent the shock rod from moving, SLOWLY push down on the shock rod end cap; then slowly screw in shock rod end cap to allow air and oil to escape past the threads of the end cap. Tighten securely.

Fig. 9-502



AG841

15. Install the reservoir end cap into the remote reservoir; then install circlip. Pull out on the reservoir end cap to ensure that the circlip has been properly seated in its groove.

Fig. 9-503



AG842

Fig. 9-504

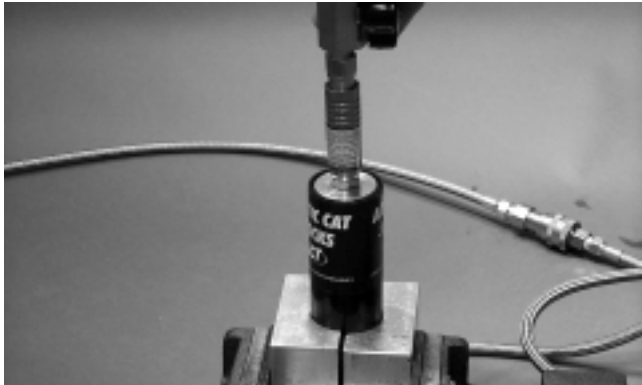


AG843

16. Pressurize the shock (refer to Pressurizing Rebuildable Shocks in this sub-section).

■ **NOTE:** The shock must be pressurized and de-pressurized before an accurate piston depth measurement can be taken.

Fig. 9-505



17. Test the shock by pushing down on the shock shaft until it bottoms; then release the shaft. The shaft should return smoothly to the extended position.

■ **NOTE:** If a soft spot or a mushy area is felt as the shaft is pushed down, this would indicate air in the shock body. If there is air in the shock body, repeat the entire disassembly and assembly procedure.

18. Clamp the remote reservoir upright in the shock blocks. Discharge all pressure from the reservoir. Push the remote reservoir end cap in and remove the circlip. Remove the remote reservoir end cap.
19. Measure the piston depth from the top of the reservoir body to the top of floating piston. Measurement should be between 76.20-88.90 mm (3.0-3.5 in.). If measurement is not correct, pour 1 inch of shock oil on top of the piston. Remove the Allen-head screw; then move the piston to the proper depth and install Allen-head screw with O-ring.
20. Pour out excess oil. Reinstall the end cap and circlips; then pressurize the shock.
21. Install the valve screw in the end of the remote reservoir.
22. Disconnect the adjuster reservoir; then refill the adjuster reservoir.

FILLING ADJUSTER RESERVOIR

1. Remove the adjuster end cap; then remove the Allen-head screw from the center of the floating piston.

Fig. 9-506

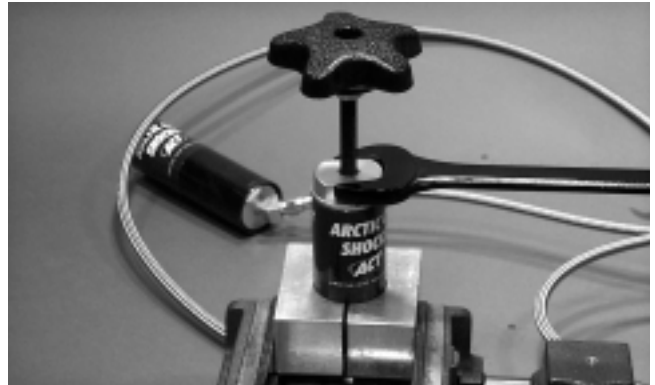


Fig. 9-507



2. Remove the floating piston from the adjuster assembly.

Fig. 9-508



3. Pour oil into the adjuster body until it reaches the bottom of the threads. Allow time for all air bubbles to dissipate.

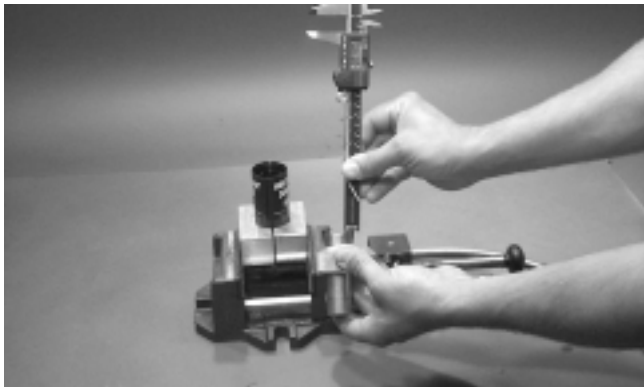
Fig. 9-509



AG848

4. Adjust the piston location tool to 13.2 mm (0.520 in.) for 1994-1996 models and to 16.8 mm (0.660 in.) for 1997-2000 models.

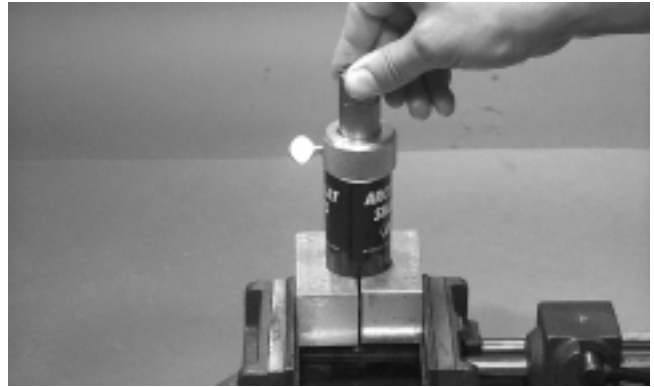
Fig. 9-510



AG824

5. Using a good low-temperature grease, lightly grease the O-ring of the floating piston.
6. Using a long needle-nose pliers, insert the floating piston into the adjuster body until the piston is flush with the top of the body.
7. Using the piston location tool as a handle, push the piston down into the adjuster body until the adjustment stop of the tool comes in contact with the adjuster body. The piston should now be located correctly.

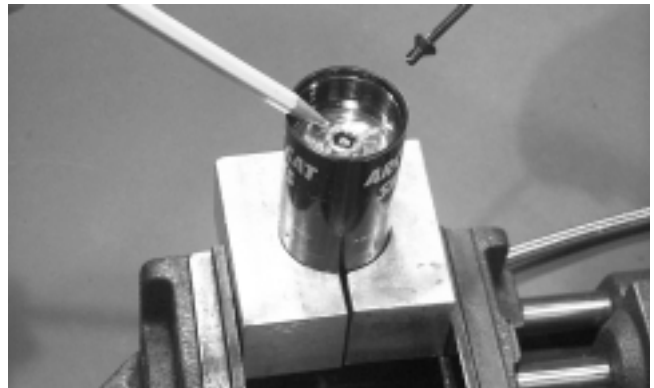
Fig. 9-511



AG825

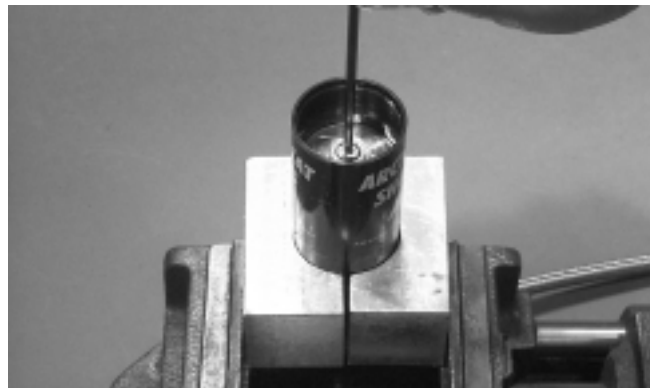
8. Install the Allen-head screw with a new O-ring into the floating piston; then while securing the piston with a 9/16-in. wrench, tighten the Allen-head screw.

Fig. 9-512



AG826

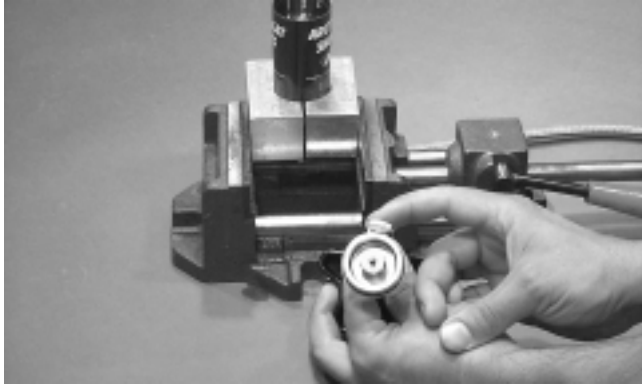
Fig. 9-513



AG827

9. Pour out the excess oil from the adjuster assembly; then grease the tip of the floating piston adjuster screw using a good quality grease.

Fig. 9-514



AG828

10. Install the adjuster knob making sure the knob is turned out (counterclockwise) completely. Tighten securely.

Fig. 9-515



AG829

Fig. 9-516



AG830

11. There must be a 1/4 to 1 turn of free-play on the knob. If handle free-play is not within specifications, repeat steps 1-10.

Installing Internal Travel Limiting Spacers

These spacers are used to shorten the travel of the shock absorber to fine tune the suspension to the operator's driving style.

If installing the spacers in the internal floating piston shock absorbers used on the 1992-2000 models, follow these steps.

1. Disassemble the shock absorber as covered in this manual.
2. Place the shock shaft eyelet into a vise and remove the nut securing the piston to the shock shaft.

Fig. 9-517



AP028

3. Carefully remove the piston and its valving plates stacked on either side of the piston from the end of the shock shaft.

■ **NOTE:** When removing the piston and valve plates from the shock shaft, place the piston assembly on a 5/16 x 3-in. cap screw and secure with a nut to keep the assembly in its proper order.

Fig. 9-518



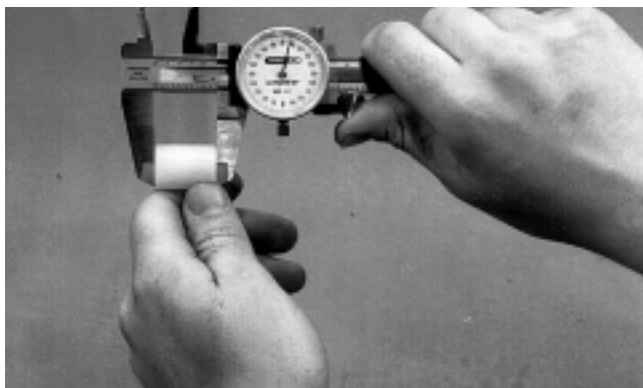
AP032

■ **NOTE:** If the piston assembly should become mixed, the large slots of the piston must be located next to the lock nut of the shaft. Refer to the appropriate Illustrated Parts Manual for valve plate location.

■ **NOTE:** If a rubber washer is found on the shock shaft next to the bottom side of the bearing cap, it must be removed before installing the limiting spacers. The rubber washer must not be used with the spacers installed.

4. Measure the length of the limiting spacer(s) that are being installed on the shock shaft. Write down this measurement as it will be required to properly calculate the floating piston depth later in the assembly process.

Fig. 9-519



AP053

5. Install the desired number of limiting spacers on the shock shaft.

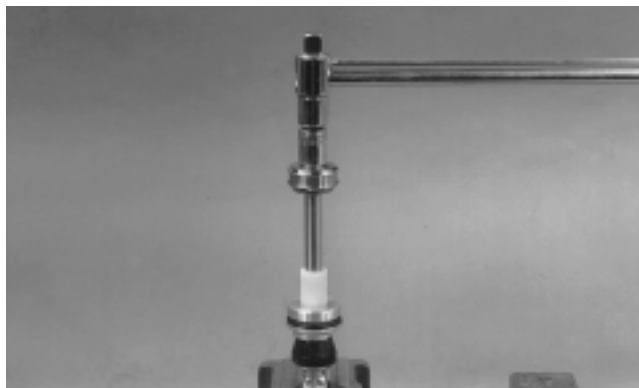
Fig. 9-520



AP054

6. Install the heavy spacer washer and then the piston with valve plates located on either side onto the shock shaft. Check to make sure the piston has been installed with its large slots positioned next to the lock nut which secures the assembly to the shaft.
7. Install the lock nut and tighten to 2.1-2.8 kg-m (15-20 ft-lb).

Fig. 9-521



AP055

CAUTION

Do not over-tighten the lock nut. If excess torque is applied, damage to the piston and valves will occur.

■ **NOTE:** For installing spacers on an IFP shock, proceed to step 8. For installing spacers on a remote reservoir shock, proceed to the appropriate assembly procedure for the type of shock being serviced.

8. Apply a light coat of oil on the O-ring and piston ring. Install piston and the shock shaft assembly into the shock body.

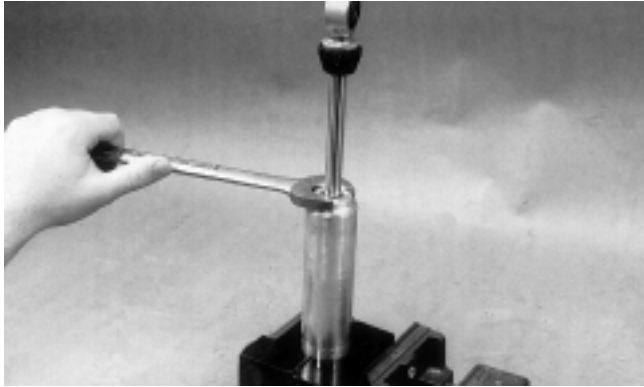
Fig. 9-522



AP033

9. Place the shaft bearing cap into the shock body and tighten securely.

Fig. 9-523

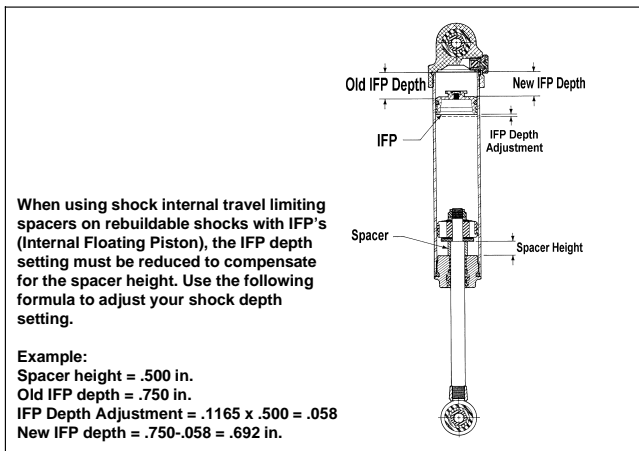


AP026

10. Remove the shock body from the vise and re-position the shock body and holding blocks in the vise so its open end is "up." Extend the shock shaft fully out; then fill the shock body with Shock Oil (p/n 0636-664) to within 1-in. from the top. Slowly stroke the shaft up and down to remove air from under the piston. Oil may need to be added to keep the shock full. Fill shock to within 1/4-in. from the top. Allow 5 minutes for all air bubbles to rise to the top.

NOTE: Before installing the internal floating piston, refer to the illustration below and calculate the new piston depth using the measurement taken earlier of the spacer(s) installed and the formula provided in the illustration.

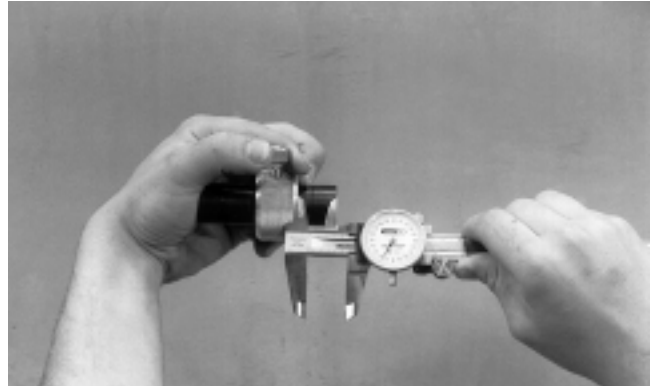
Fig. 9-524



0730-266

11. After calculating the new piston depth, measure out this distance on the shock piston location tool; then adjust and secure the location knob.

Fig. 9-525



AP050

12. Apply a light coat of oil on the floating piston ring and O-ring and install the floating piston in the shock body.

Fig. 9-526



AG850

13. Using a long needle-nose pliers, insert the floating piston into the adjuster body until the piston is flush with the top of the body; then using the piston location tool as a handle, push the piston down into the adjuster body until the adjustment stop of the tool comes in contact with the adjuster body. The piston should now be located correctly.

Fig. 9-527



AG339

■ **NOTE:** As the floating piston is pushed into the shock absorber body, air and excess oil will come out through the hole in the piston. If no oil comes out through the hole in the piston, remove the piston and add more oil to the shock body.

14. Install the Allen-head screw and O-ring into the bottom of the floating piston. Tighten the Allen-head screw.
15. Pour out the excess oil from the shock body.
16. Install the lower end cap on the shock body.
17. Using Retaining Blocks (p/n 0644-142), hold the shock body in place and tighten the end cap using an adjustable wrench. Pressurize the shock following the shock pressurizing procedure.

Servicing Rebuildable Shocks, Remote Reservoir, & Remote Reservoir w/Clicker

⚠ WARNING

Before servicing a gas shock absorber, first discharge all pressure from the reservoir. Remove the screw from the top of the reservoir and insert the Shock Inflation Needle (p/n 0644-158). Open valve until all pressure is released. Failure to do this may cause personal injury.

REMOVING AND DISASSEMBLING

1. Remove the shock absorber from the snowmobile. Remove the mounting bushings and bearings from the shock.
2. Wash the shock body and reservoir in parts-cleaning solvent; then dry with compressed air to remove sand and dirt.

⚠ WARNING

When using compressed air to dry components, always wear safety glasses.

⚠ WARNING

When working with Shock Inflation Needle (p/n 0644-158), use extreme care. Misuse of this tool may cause personal injury or death. Avoid puncturing skin with needle. Pressurized air injected through the skin may be fatal. Do not release safety mechanism unless red nose piece is inserted in shock absorber air valve.

3. Remove the screw from the bladder housing on bottom of shock reservoir; then discharge all pressure from the shock reservoir using Shock Inflation Needle (p/n 0644-158). Open valve in filler handle until all pressure is released.

Fig. 9-528



AG851

⚠ WARNING

Failure to remove pressure from shock reservoir may result in personal injury.

4. Clamp the shock body eyelet in a vise; then using a 1-in. wrench, unscrew the shaft bearing cover.

■ **NOTE:** If the shock body turns in lower end cap, use shock blocks to hold the shock.

Fig. 9-529



AG852

5. With the bearing cover loosened, lift the shaft assembly from the shock body.

Fig. 9-530



AG853

6. Remove the piston ring from the piston.
7. Loosen (BUT DO NOT REMOVE) the self-locking nut from the bottom of the shock shaft; then clean the piston area with clean parts cleaner to remove any dirt or foreign material from between the valves. Dry the piston and valves completely using compressed air. Tighten self-locking nut to 2.1-2.8 kg-m (15-20 ft-lb). Do not over-tighten! If excess torque is applied, the piston and valves will be damaged.

Fig. 9-531



AG280

■ **NOTE:** Do not remove the self-locking nut from the bottom of the shock rod unless piston or piston valve changes are needed as it is very important the valving on either side of the piston stay in the proper position.

8. Install the piston ring on the piston.
9. Push down on the reservoir end cap compressing it 2.5 cm (1-in.) into the reservoir; then remove the reservoir cap retainer ring. Use care not to scratch the inside of the reservoir.

Fig. 9-532



AG854

■ **NOTE:** With the retainer ring removed, wipe the ring area clean to remove any foreign materials.

10. Remove the reservoir end cap by grasping the bladder housing with a pliers and pulling the cap slowly out of the reservoir body.

Fig. 9-533

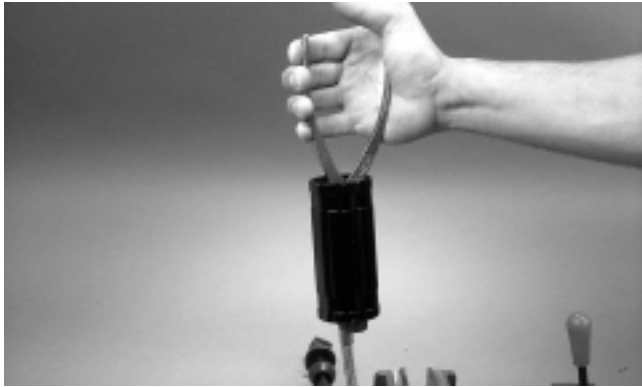


AG855

11. Remove the Allen-head screw and O-ring from the center of the piston. Remove the piston from the reservoir by grasping the raised area of the piston using a pliers. Pull the piston from the reservoir and account for the piston ring.

■ **NOTE:** If the clicker adjustment assembly located at the opposite end of the reservoir shows no signs of oil leakage, removal of the assembly won't be necessary.

Fig. 9-534



AG856

■ **NOTE:** When servicing the clicker remote reservoir only, use new shock oil to flush out the shock and reservoir bodies; otherwise, residual parts-cleaning solvent may be trapped in the reservoir causing oil contamination.

12. Pour the oil out of the shock and reservoir; then clean the inside of the reservoir and shock body using clean parts washer solvent. Blow dry using compressed air.

⚠ **WARNING**

When using compressed air to dry components, always wear safety glasses.

■ **NOTE:** If the shock bearing cap does not show signs of leakage or damage, do not remove from the shaft.

13. Inspect shock shaft for straightness, nicks, or burrs. Inspect shock and reservoir bodies for dents or scratches. Inspect piston valves for bending or cracking. Inspect all O-rings and seals for nicks, cuts, or cracking. Inspect rubber bottom-out bumpers for wear or damage. Replace any worn or damaged parts.

■ **NOTE:** If changing or removing shock shaft, bearing cap, eyelet, or bottom-out bumper, refer to those sub-sections.

ASSEMBLING

1. Place the shock into a vise at a slight angle and fill the shock reservoir with Shock Oil (p/n 0636-664).

Fig. 9-535



AG857

■ **NOTE:** If filling shock with a remote reservoir, hold the reservoir lower than the shock. By holding the reservoir low as oil is added to the reservoir, air in the hose will be forced into the shock body and out of the system.

2. With the Allen-head screw and O-ring installed in the reservoir piston and the reservoir full of shock oil, compress the piston ring into position with fingers and slowly push the piston down into the reservoir until the O-ring is down in the reservoir housing.

Fig. 9-536



AG858

3. Let the reservoir hang down for a few minutes to let air bubbles rise to the top and into shock body.
4. Rotate the clicker adjustment to the number one position; then using a clean pair of pliers, grasp the hex area at the center of the piston and slowly push the piston down into the reservoir until it bottoms in the reservoir. Once the piston has bottomed out in the reservoir, slowly pull up on the piston approximately ½ in. Next, slowly push the piston back down until it once again bottoms. Repeat this procedure several times until no air bubbles are seen rising in the oil in the shock body.

Fig. 9-537

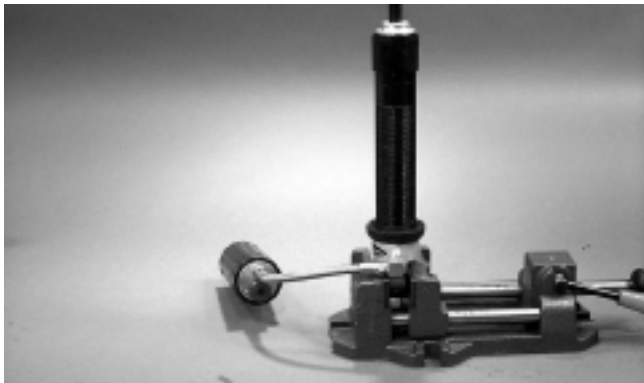


AP108

■ **NOTE:** The oil in the reservoir will remove any air in the hose or passageway between the reservoir and shock body.

5. Once all air has been removed from the reservoir body, bottom the piston in the reservoir and then pull the piston upward approximately 1/8 in. Rotate the clicker knob to number eight; then allow the reservoir to hang down below the shock absorber in the vise to permit any air that might remain in the reservoir to rise into the shock body.

Fig. 9-538



AG859

6. Install the reservoir end cap and O-ring down into the reservoir approximately 2.5 cm (1 in.). Install the retainer ring making sure it is firmly in place.

Fig. 9-539



AP011

7. Grasp the bladder housing with a pliers and pull it up into place against the retainer ring.
8. Slowly pour oil into the shock body until it is 1/4 in. from the top of the shock body. Again, allow five minutes to elapse before proceeding.
9. Space the bottom edge of the bearing cap approximately 1/2 to 1 in. away from the piston assembly.
10. To install the shock rod, align the valve piston wear ring end gap with the low-speed orifice cutaway positioning the cutaway so it faces the upward angle of the shock body which will allow air to escape.

Fig. 9-540



AG860

11. Compress the piston ring into position with fingers and slowly start the piston assembly down into the shock body.

Fig. 9-541



AG853

12. Give the end of the shock rod a few light taps with the palm of the hand to help release air bubbles from the piston valves.

■ **NOTE:** Be careful not to damage the piston ring and watch that the piston ring ends are overlapped and in place as the piston is installed.

13. Install the end cap very slowly to allow excess air and oil to come out the threads; then using a 1-in. wrench, tighten the bearing cap firmly down in place. **Do not push down on the shock shaft until the reservoir has been pressurized.** Pressurize the reservoir.

Fig. 9-542



AG852

14. Discharge all pressure from the shock reservoir using Shock Inflation Needle (p/n 0644-158). Open valve in filler handle until all pressure is released.
15. Push down on the reservoir end cap compressing it 2.5 cm (1 in.) into the reservoir; then remove the reservoir cap retainer ring. Use care not to scratch the inside of the reservoir.
16. Measure the piston depth from the top of the reservoir body to the top of the floating piston. Measurement should be between 31.75-36.83 mm (1.250 - 1.450 in.). If measurement is not correct, pour 1 inch of shock oil on top of the piston. Remove the Allen-head screw; then move the piston to the proper depth and install Allen-head screw with O-ring.
17. Install the reservoir end cap and O-ring down into the reservoir approximately 2.5 cm (1 in.). Install the retainer ring making sure it is firmly in place.
18. Pressurize the reservoir.
19. Install the shock mounting bushings and bearings in eyelets. If clicker shocks, set back to desired setting.

Bearing Cap and Shaft Seal

REMOVING AND DISASSEMBLING

1. With shaft assembly removed from shock body, clamp shaft eyelet in vise and remove the lock nut.

Fig. 9-543

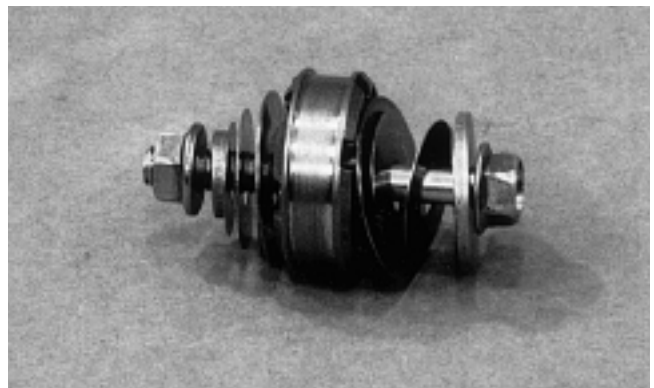


AP028

2. Lift the piston valve assembly.

■ **NOTE:** When removing the piston and valve plates from the shock shaft, place the piston assembly on a 5/16 x 3-in. cap screw and secure with a nut to keep the assembly in its proper order.

Fig. 9-544



AP032

3. Remove the bearing cap (on front arm adjuster shocks, remove the adjuster piston and a spacer washer first).
4. Remove the outer plastic wiper; then remove the inner rubber wiper from the bearing cap.

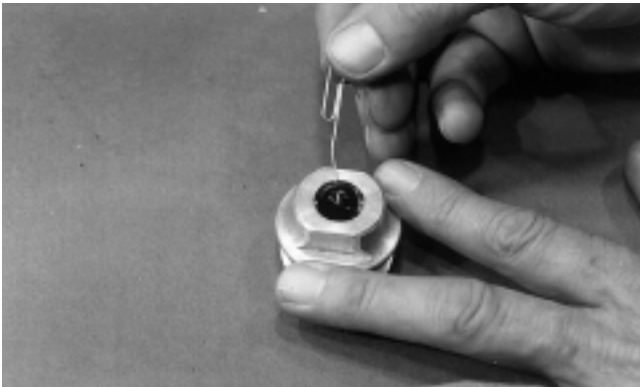
Fig. 9-545



AG257

5. Using a small paper clip bent on one end, remove the inner O-ring.

Fig. 9-546

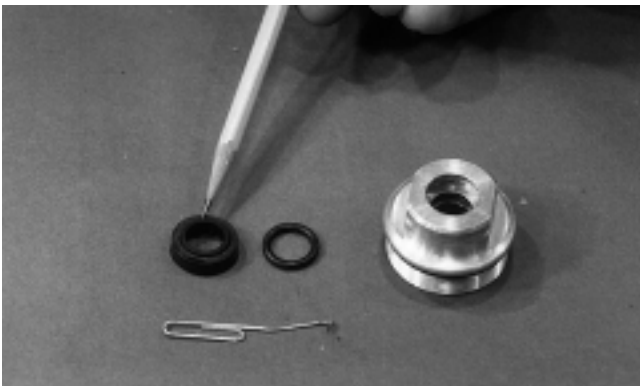


AG258

ASSEMBLING AND INSTALLING

1. Install new O-ring and inner rubber wiper into the shaft bearing cap; then install outer plastic wiper.

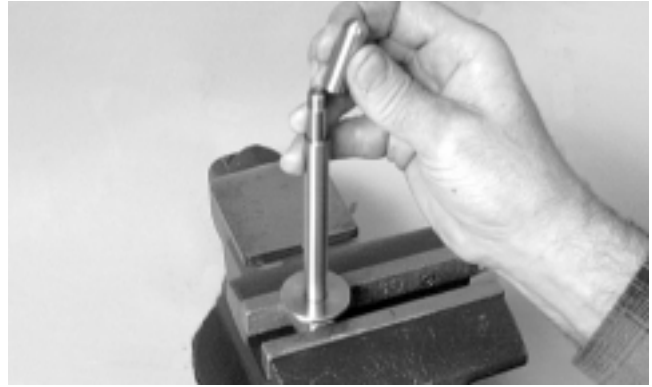
Fig. 9-547



AG259

2. Inspect the shoulder or step of the shaft for sharp edges or a burr. Smooth up with #400 grit sand paper or emery cloth.
3. Put Bearing Cap Installation Tool (p/n 0644-268) over the threaded end of the shaft.

Fig. 9-548



AP114DA

4. Put a small amount of light grease on the seal and slide the bearing cap over the tool and onto the shaft.

Fig. 9-549



AP115DA

5. On a front arm adjuster shock, install the spacer washer on shaft and install adjuster piston in the same manner as bearing cap; then remove the installation tool.
6. Install piston valve assembly. Tighten the self-locking nut to 2.1-2.8 kg-m (15-20 ft-lb).

Fig. 9-550



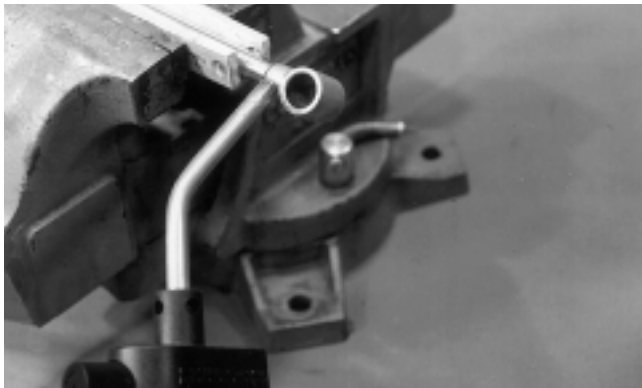
AG280

Shaft Eyelet

REMOVING

1. Using Shock Rod Clamping Tool (p/n 0644-277) to prevent damage to the shaft surface, place the shock shaft into a vise.
2. Heat the shaft eyelet with a torch to soften the Loctite.

Fig. 9-551



AG260

■ **NOTE:** The eyelet must be heated up to 300° for the Loctite to soften.

3. Using a wrench, unscrew the eyelet from the shaft.

Fig. 9-552



AG261

INSTALLING

1. Clean shaft threads and eyelet threads. Apply red Loctite to both threads and tighten securely.

Ski Shocks Bottom-Out Bumper

Bottom-out bumper can be replaced by removing shock eyelet or by removing piston valving assembly and bearing cap.

Pressurizing Rebuildable Shocks

To pressurize the gas shock absorber, a regulator system and a nitrogen tank will be needed.

Fig. 9-553



AG271

⚠ WARNING

Never have a nitrogen bottle in the shop without having it chained or secured. If the bottle should tip over and the regulator break off, the gas inside it is under 1800 lb of pressure and personal injury may result.

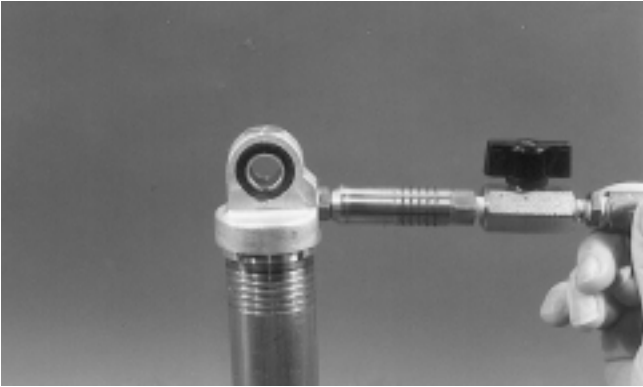
⚠ WARNING

Always rotate the regulator T-handle to its loose position each time when finished using the system. Each time before the nitrogen tank valve is opened, check to make sure the regulator T-handle is turned out. When opening the nitrogen tank valve, never stand in front of the regulator in case there should be a problem.

■ **NOTE:** Before inserting the needle into the bladder, lubricate the needle with light oil to make installation easier.

1. Insert the Shock Inflation Needle (p/n 0644-158) into the shock bladder; then open the valve on the filler handle.

Fig. 9-554



AG335

2. Turn the nitrogen tank valve open and slowly rotate the regulator T-handle inward until the gauge reads 200 lb of pressure; then close filler valve and remove inflation needle.

■ **NOTE:** On remote reservoir shocks, use a needle nose vise grips to hold the bladder housing to keep the end cap from pushing into the reservoir when inserting the inflation needle.

Fig. 9-555



AG851

3. Install the screw into the bladder housing and tighten securely.
4. With the reservoir pressurized, push down on the shock shaft until it nearly bottoms and release it. The shaft should return to its extended position smoothly.

■ **NOTE:** If a soft spot or a mushy area is felt as the shaft is pushed down, this would indicate air in the shock body. If there is air in the shock body, discharge the reservoir gas pressure. Disassemble the shock to the point that the “filling with oil” and the “bleeding air” procedures can be redone. Assemble and repeat the pressurizing procedure. To test the shock absorber for nitrogen gas leaks, submerge in water.

Troubleshooting Track

Problem: Track Edge Frayed—Drive Lugs Worn	
Condition	Remedy
1. Track alignment adjusted incorrectly	1. Align—replace track
Problem: Track Worn Adjacent to Outer Drive Lugs	
Condition	Remedy
1. Track tension adjusted incorrectly	1. Adjust track tension
2. Rear idler wheels dirty—damaged	2. Clean—replace idler wheels
Problem: Track Ratchets—Slaps Tunnel	
Condition	Remedy
1. Track tension adjusted incorrectly (too loose)	1. Adjust track tension (tighten)
2. Drive sprockets misaligned—damaged	2. Align—replace sprockets
Problem: Wear-Strip Wear Excessive	
Condition	Remedy
1. Slide rail bent—broken—damaged	1. Repair—replace slide rail
2. Track alignment adjusted incorrectly	2. Adjust track alignment