SECTION II

BODY AND STEERING

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CLEANING AND PRESERVATION OF HOOD, CHASSIS, AND TRIM

Proper storage starts by cleaning, washing, and waxing the hood, chassis, upholstery, and plastic parts. Clean and touch up with paint any rusted or bare metal surfaces. Ensure that all corrosive salt and acids are removed from surfaces before beginning preservation with waxes and rust inhibitors (grease, oil, or paint).

If the machine is equipped with electric start, disconnect the battery cables and clean the cables and battery post. Remove and store the battery in a cool dry place.

The machine should be stored in a dry garage or shed out of the sunlight and covered with a fabric snowmobile cover.

CONTROLS AND LINKAGE

All bushings, spindle shafts, and tie rod ends should be coated with a light coat of oil or grease. Throttle controls and cables should be lubricated with light oil or WD-40, LPS, etc. Force a small amount of lubricant down cable.

ELECTRICAL CONNECTIONS

Separate electrical connector blocks and clean corrosive build-up from connectors. Lubricate or pack connector blocks with petroleum jelly and re-connect. Replace worn or frayed electrical wire and connectors.

CLUTCH AND DRIVE SYSTEM

Remove drive belt and store in cool dry location. Lubricate surface faces, shaft, and ramps of drive and driven clutches with light oil (oil must be cleaned off before installing belt for service). A generous amount of lubrication, such as WD-40, LPS, etc., should be sprayed through the three windows on the drive clutch cover and onto the rollers and weight pins. Replace chaincase lubricant with new oil. Spray lubricant on steel drive shafts, etc., to reduce rusting.

TRACK AND SUSPENSION

Under normal conditions moderate track tension should be maintained during summer storage. Apollo rubber track tension should be maintained at the prescribed normal operating tension specified in this manual. The rear of the machine should be supported off the ground to allow free hanging of track.

ENGINE AND CARBURETOR

There are two methods of properly preparing an engine for storage. The best method is to keep your machine in an area where you can run the engine for about five minutes twice a month. This gives the crankshaft bearings and cylinder walls a fresh coat of oil. Run the engine at about 3,000 RPM and stop it by pulling the choke. This method will prevent rusting of the cylinder walls and prevent the formation of varnish from evaporated fuel in the carburetor.

However, this approach to summer storage is not always feasible, and if not suitable, the following method of engine storage can be used. The fuel tank, fuel lines, and carburetor should be completely drained of gasoline. The engine should be run until it stops to eliminate any gas remaining in the carburetor. Support the front of the snowmobile so that the engine is level or tilted slightly rearward. Remove the spark plug(s). Rotate the piston to B.D.C. (piston in its lowest position) and pour approximately two ounces of Polaris 40:1 petroleum-base oil into the cylinder. NOTE: Allow ample time for the oil to flow from the top of the piston, down the transfer ports and onto the crankshaft bearings before proceeding to the next cylinder. Turn the engine over several times to ensure coverage of piston rings, cylinder walls, and crankshaft bearings.

BODY AND STEERING

Torque Specifications

The following torque specifications are to be used for all applications, except for special cases where the Torque Deviation List will apply.

Standard Torque Specifications

Bolt Size	Threads Per Inch	Torque – Minimum – Maximum
8	18 & 32	18 – 21 in./lbs.
10	24 & 32	20 – 24 in./lbs.
1/4	20 & 28	5 – 6 ft./lbs.
5/16	18 & 24	10 – 12 ft./lbs.
3/8	16	18 – 22 ft./lbs.
3/8	24	20 – 25 ft./lbs.
7/16	14	25 – 30 ft./lbs.
7/16	20	30 – 40 ft./lbs.
1/2	13	50 – 57 ft./lbs.
1/2	20	55 – 65 ft./lbs.

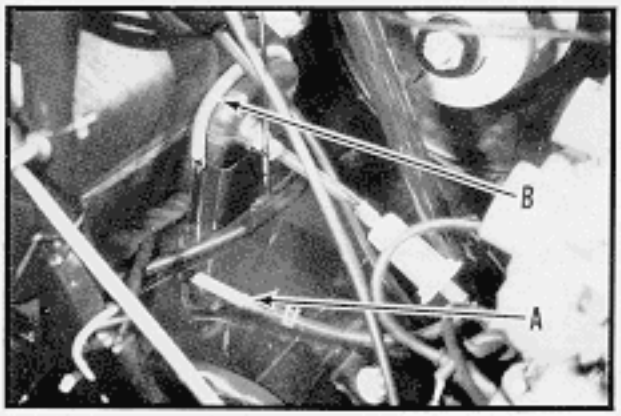
Torque Deviation List

Bolt Size	Description	Torque – Minimum – Maximum
1/4	Handlebar Adjuster Block	11 – 13 ft./lbs.
5/16	175 Drive Clutch Bolt	18 – 20 ft./lbs.
5/16	Skag Bolt	14 – 16 ft./lbs.
3/8	Spring Saddle	36 – 50 ft./lbs.
3/8	Steering Arm	36 – 40 ft./lbs.
3/8	Tie Rod	35 – 40 ft./lbs.
3/8	Suspension Mounting	35 – 40 ft./lbs.
3/8	Nut on Tie Rod	35 – 40 ft./lbs.
3/8	Engine Mounting Bolt	34 – 38 ft./lbs.
7/16	Engine Mounting Bolt	55 – 60 ft./lbs.
7/16	Drive Clutch Bolt	40 – 45 ft./lbs.
	Flywheel Nut – 175cc	30 – 35 ft./lbs.
	Flywheel Nut – All Other	60 – 65 ft./lbs.

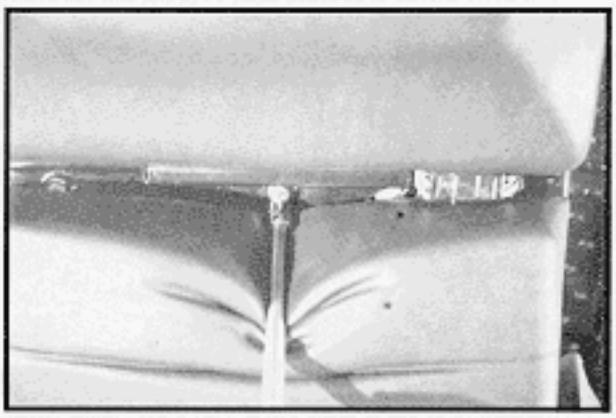
Conversions

1 Inch = 25.4mm
1mm = .0394 Inch
1 Mile = 1.609 Kilometers
1 Kilometer = .62 Mile
1 U.S. Gallon = .8327 Imperial Gallon
1 Imperial Gallon = 1.2009 U.S. Gallons
Number of Cubic Centimeters x 0.061 = Cubic Inches
Number of Cubic Inches x 16.387 = Cubic Centimeters
Number of Foot Pounds x 0.1383 = Kilogram Meters
Number of Kilogram Meters x 7.235 = Foot Pounds

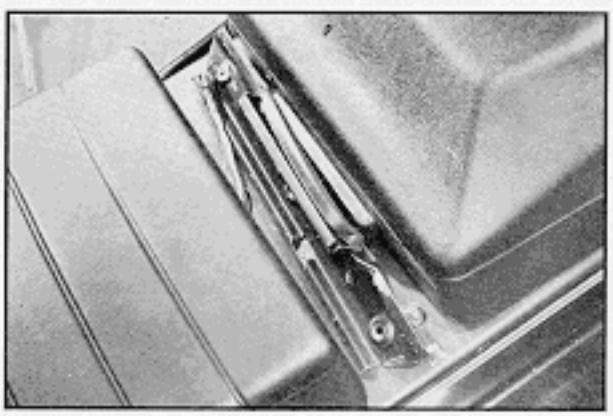
1. Disconnect the gas line from the fuel pump and plug the line to prevent fuel spillage from the tank (A). Roll the front tank hold-down spring (B) forward off the tank saddle.



2. Remove the two bolts holding the rear of the seat to tunnel. Remove the fuel tank and seat hold-down strap by removing the retaining nuts located between the tank and seat.

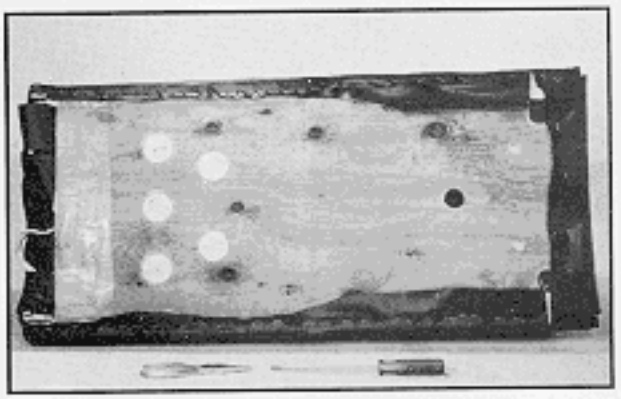


3. The seat and fuel tank can now be removed from the chassis.



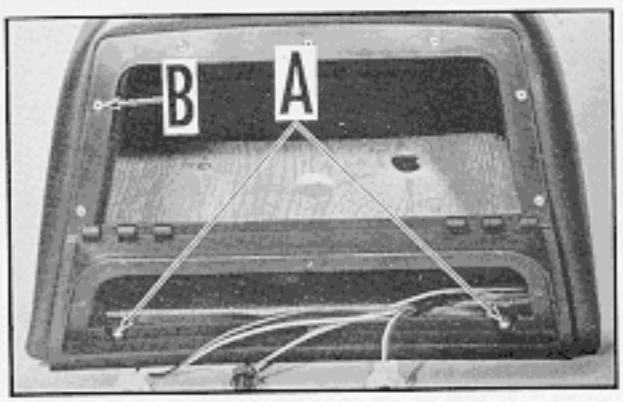
Seat Cover Replacement

Seat covers on models fitted with loose cover are replaceable by removing existing cover and replacing as outlined below. On models with molded-in cover, the new cover will have to be installed over the top of the existing cover.



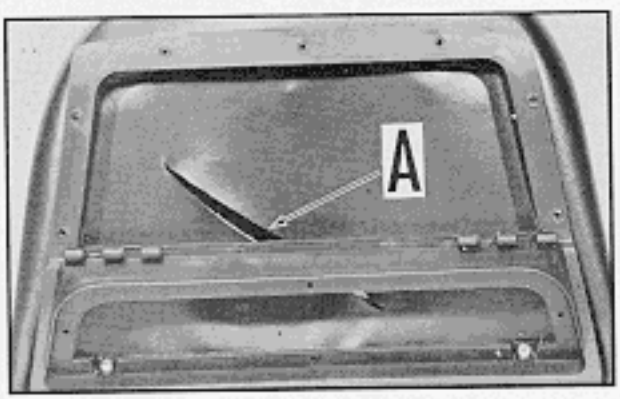
1. Remove the seat cushion from snowmobile as outlined on page II – 3.

2. Remove the staples from the seat board.



3. On models equipped with rear storage compartment, the door frame must be removed.
   - A. Remove the taillight lens.
   - B. Slide the taillight housing out and remove the tail and brake light sockets.
   - C. Remove the two screws at the bottom of door frame (A).
   - D. Drill out the seven 1/8" blind rivets (B).
   - E. Remove old cover.

4. Pull cover tightly and evenly and restaple to seat board. Cut and tuck the forward portion under the seat board as shown.



5. Place the door frame into position and install the two screws located at the bottom of door frame. Cut the material in middle of door frame as shown (A). Push the door frame securely into position (corners first). Re-rivet to compartment housing and remove excess material from compartment area. NOTE: If rivet holes were damaged when old rivets were removed, new holes can be drilled between existing holes.

6. Reinstall light socket to taillight housing and install lens. Make a final check for a wrinkle-free finish before reinstalling to snowmobile.

1. Remove old decal. NOTE: Before removing old decal it is important to note its position by marking it in several locations. A small amount of heat will aid in removing the old decal.

2. Thoroughly clean hood in the area in which the new decal will be installed. Apply a solution of mild soap and clean water to this area (approximately four ounces mild soap to one gallon of water).

3. Remove decal backing. With the decal positioned on hood, apply the soap/water solution to the top of decal. Holding decal in position, remove all trapped air and soap/water solution out from under the decal.
IMPORTANT: This must be done with a clean, soft rubber squeegee to prevent scratching of the decal outer surface. Apply heat to the installed decal to ensure it is fastened.

FOR MODELS REQUIRING THE DECAL END TO BE STRETCHED AROUND THE RADIUS AT REAR OF HOOD

1. Fasten a straight edge to the tail end of decal as shown.

2. The mass of the decal which has been secured in the above steps will allow you to pull or stretch the remaining portion around the radius and into position. NOTE: Applying a small amount of heat to the decal will aid in forming it to the radius.

3. Apply soap/water solution to top of decal and remove trapped air. Scribe and remove excess decal material and reinstall hood trim molding.

BODY AND STEERING

ABS Nosepan — Care, Cleaning, and Repair

CARE AND CLEANING

ABS nosepans will retain their original finish with reasonable care and handling. The following suggested care and cleaning tips will help to keep the original luster.

DO:

——dust and clean with a soft, damp cloth or chamois, wiping the surfaces gently.

——use pure soap and lukewarm water — mild detergents or most household cleaners are recommended.

——dry the surfaces, after washing and rinsing, by blotting with a damp cloth or chamois.

——wax sparingly the surfaces for protection and the highest degree of polish. Apply household or commercial type wax sparingly in a thin, even film with a soft clean cloth.

——polish waxed surfaces lightly with a clean cotton flannel or jersey. After polishing, wipe gently with a damp cloth to ground any electrostatic charges which may attract dust particles.

DO NOT:

——use cloths containing grit or abrasive particles or kitchen scouring compounds to clean or dust. Light scratches may be rubbed out with wax.

——use boiling water or strong solvents to clean, as they will soften the plastic.

——use strong soaps or abrasives.

SPECIAL CLEANING PROBLEMS

Dirt and Grease: Normal liquid cleaners or soap and water may not always remove grimy dirt. Janitor in a Drum and Cascade were found to be the best cleaners to remove ground-in dirty grease.

Stains: Stains such as iodine may be safely removed with 45 percent isopropanol (rubbing alcohol). The higher concentrated, commercial grades will remove the stain but will dull the film surface. The gloss can be returned with Simoniz.

Surface Scratches and Abrasions: Light scratches can be removed by waxing with Simoniz paste wax. Deeper scratches may be removed by lightly buffing with a fine grade of rubbing compound.

REPAIR OF CRACKS AND FRACTURES

Materials Needed:

1. Fiberglass cloth.
2. ABS pipe cement. (Several types of plumbing cement are available. Be sure to use one which is for PVC and ABS material, or ABS material only. Do not use cement labeled "for PVC only.")
3. Polaris blue ABS touch-up paint, PN 2870423. Do not use the standard Polaris touch-up paint, as it is not adaptable to ABS.

Procedure:

1. Clean all dirt, grease, etc., from the area around the crack. The crack itself should be as clean as possible. (Household detergent should work well.) Be sure the pan is dry before proceeding to step 3.
2. Cut a piece of the fiberglass cloth approximately 3" wide and long enough to extend 1" to 2" past the ends of the fracture.
3. Separate the edges of the crack slightly and fill the void with cement. Press the edges together, clamp in place, and wipe the excess cement from the outside of the pan.
4. Liberally coat the inside surface of the pan with cement, covering approximately 1 1/2" on either side of the fracture.
5. Lay the cloth over the fracture.
6. Work the cloth into the pan using a squeegee or your fingers (wear rubber gloves). ABS cement is a "solvent" cement; it actually dissolves the outer surface of the pan. The cement and cloth will take on a slightly bluish tint as this happens.

7. When the cloth is well worked in, wipe off the excess cement and let dry. Drying time will depend on the brand of cement used. Refer to the manufacturer's instructions printed on the can.

8. Lightly sand the outside of the pan and paint. A more "finished" job will result if the repaired area on the inside of the pan is also painted.

INSTALLATION OF REPLACEMENT ABS NOSEPAN

When installing a new replacement ABS nosepan, the following procedures must be closely observed to ensure correct fit to the frame and maximum strength. ABS material is not rigid; consequently, it must be installed in such a manner that it can expand or contract with temperature change.

1. Remove damaged nosepan by drilling out rivet heads. Engine and other mountings attached to forward part of sled and engine compartment should be removed for easier installation.

2. The rivets required for nosepan replacement must be aluminum. Part numbers are:

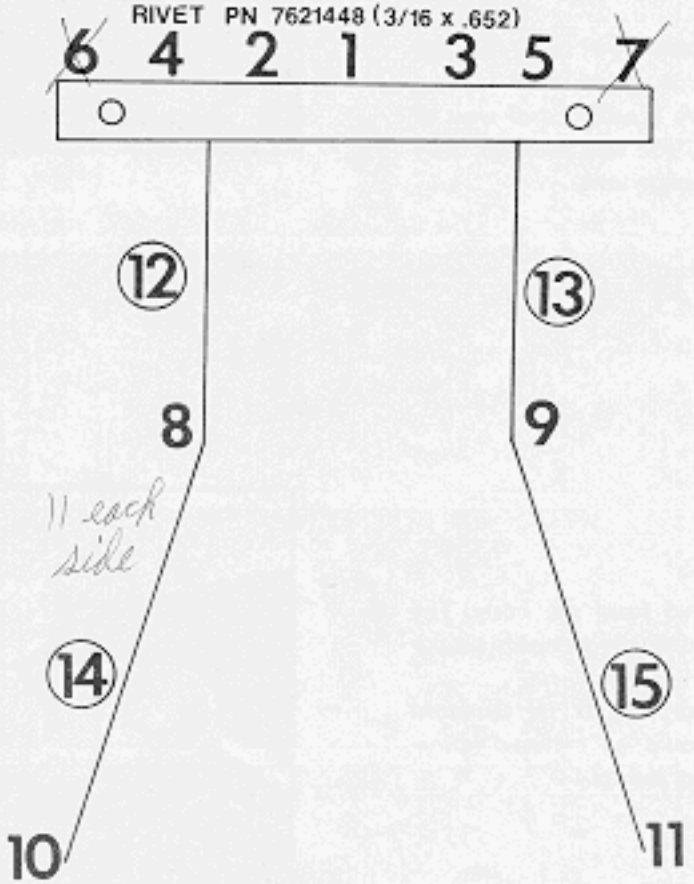
   ~~3~~ 7 each — PN 7621448 (3/16 x .652") ~~30~~ 22 each — PN 7621403 (3/16 x .527")

   All holes drilled into the nosepan are to be .220" in diameter. This will be larger than the 3/16 rivet (diameter is .187"). To drill a .220" hole use a 7/32 drill bit (7/32 diameter is .218").

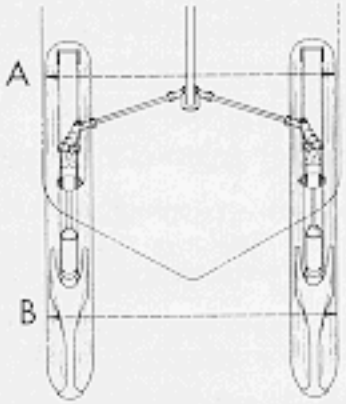
3. Position new nosepan in place and attach a bulkhead with the seven 3/16 x .652" rivets, PN 7621448 (top seven only). These rivets should be installed using rivet pattern shown below. All remaining holes use 3/16 x .527" rivets, PN 7621403.

4. Maintain 1/4" clearance around exhaust outlet.

5. Install tin foil, PN 5810108, in same location as original.



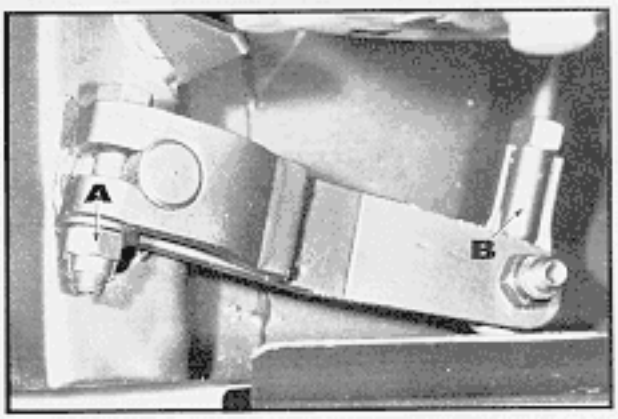
Steering Type I



Skis should be parallel at points A and B, with the handlebars at the straight ahead position. Measure from the straight edge of the ski. Skis must not toe-in.

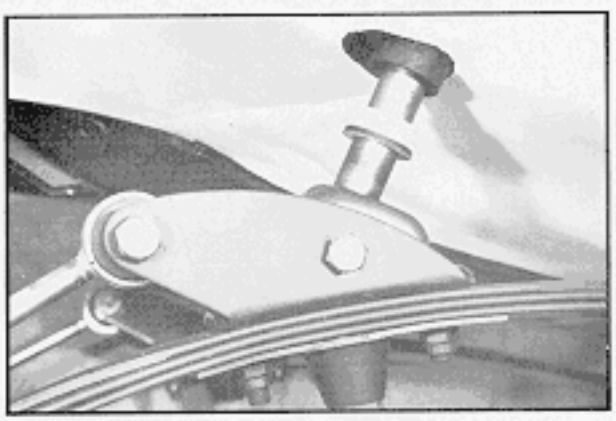
To remove the steering, first remove the steering arm bolt (A). To retain proper ski alignment, the spindle and steering arm should be marked. Adjust the tie rod end for proper ski alignment. Steering skis should be parallel with each other and with vehicle frame when handlebar is in normal straight driving position. Adjustment may be made by turning tie rod end clockwise or counterclockwise, whichever is necessary (B).

⚠ NOTE: The steering assembly of every machine should be checked whenever it comes in for tune-up or repairs. In the event there is evidence of wear or stress on the tie rods or tie rod end bearings, they should be replaced as a complete unit.



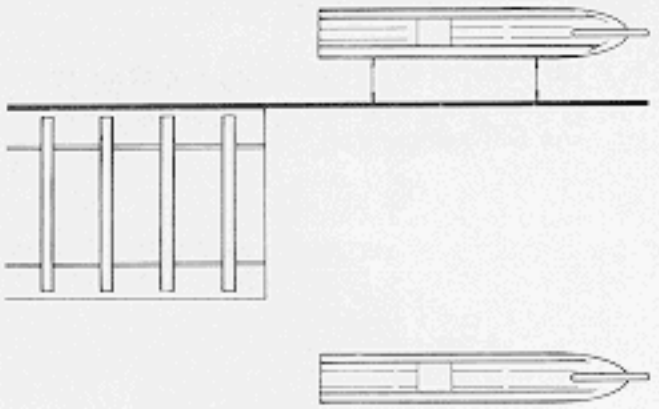
Spindle can now be removed from the body. The spindle should be lubricated annually to insure proper steering.

⚠ NOTE: If spindles appear to be damaged (bent or cracked) they should be replaced immediately before further damage results.

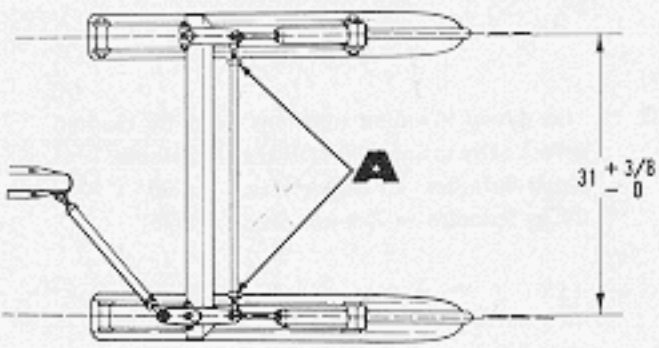
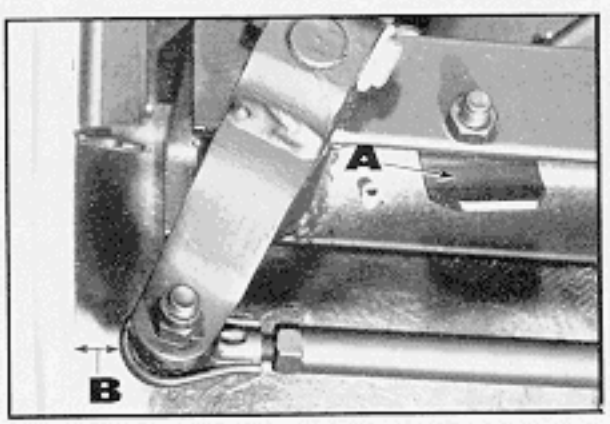


no toe in or out

With the handlebars in the straight-ahead position, place a straight edge alongside the track, measure the distance from both ends of one ski. The distance at both the front and back of the ski should be equal. When one ski is parallel with the track, measure across to the opposite ski to ensure that it is also parallel with the track. If adjustment is needed, the tie rod should be adjusted accordingly.



Ski alignment is accomplished by loosening the jam nuts on both tie rod ends (A) and rotating the tie rod in the direction required.



Adjust the steering stop (A) so the left and right steering arms clear the nosepan approximately 1/2" (B).