

K
Kawasaki

INVADER

SS340-A2

SS440-A2



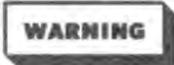
**SNOWMOBILE
ASSEMBLY &
PREPARATION
MANUAL**

Notice to Dealers

This manual is provided to ensure that the snowmobile is assembled correctly and given proper presale preparation. Your customer expects and deserves a safe, reliable snowmobile, and performance of the steps listed here is essential to that end.

The selling dealer assumes sole responsibility for any unauthorized modifications prior to sale. Refer to your Snow Products Binder for any Service Bulletins specifying Factory Directed Modifications which must be performed before the snowmobile is ready for sale.

SAFETY AWARENESS

**WARNING**

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

**CAUTION**

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to, or destruction of equipment.

Whenever you see the symbols shown above, heed their instructions! Always follow safe operating and maintenance practices.

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Dealer's Assembly and Preparation Check List

Remove the Assembly & Preparation Check List from storage case. Complete each item of the check list following the procedures outlined in this manual. Verify compliance by placing a check (✓) in box preceding each item as it is completed. Be sure to sign all sections of the form as they are completed. Retain completed check list for your records.

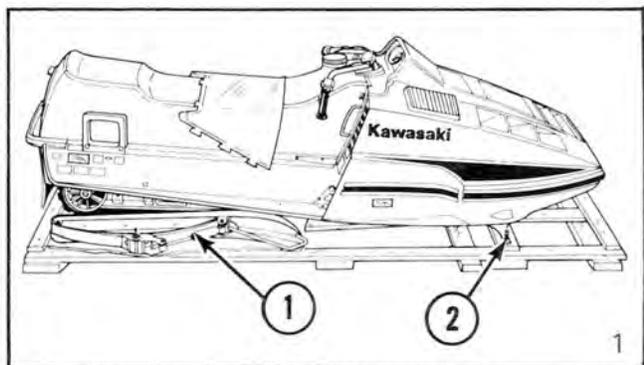
KAWASAKI SNOWMOBILE DEALER'S ASSEMBLY & PREPARATION CHECK LIST		
I hereby certify that prior to delivery to the first retail purchaser assembly and preparation servicing was performed on the snowmobile listed below in accordance with the following check list, and in compliance with the established procedures prescribed by Kawasaki: (<input type="checkbox"/> check each item when completed).		
SNOWMOBILE INFORMATION		
MODEL _____	SERIAL NO. _____	ENGINE NO. _____
ASSEMBLY CHECK LIST		
1 <input type="checkbox"/> REMOVE CRATE - check for damaged & missing parts. 2 <input type="checkbox"/> SKIS - install - torque all bolts. 3 <input type="checkbox"/> SKI SHOCKS - mount to spindle - torque bolts. 4 <input type="checkbox"/> SUSPENSION - engage springs. 5 <input type="checkbox"/> WINDSHIELD - mount to hood. 6 <input type="checkbox"/> HANDLEBARS - adjust to proper position - torque bolts.	7 <input type="checkbox"/> SAFETY DECALS - properly installed. 8 <input type="checkbox"/> TOOL KIT - complete - installed.	ASSEMBLY BY: _____ <div style="text-align: right;">Signature</div>
PREPARATION CHECK LIST		
1 <input type="checkbox"/> STEERING - align skis - components secure. 2 <input type="checkbox"/> CLUTCH ALIGNMENT - check/adjust. 3 <input type="checkbox"/> CLUTCH CENTER TO CENTER - check adjust. 4 <input type="checkbox"/> CHAIN CASE - add lube if required - check for leaks. 5 <input type="checkbox"/> BRAKE - clean disc - adjust. *6 <input type="checkbox"/> WIRING HARNESS - electrical connectors secure. *7 <input type="checkbox"/> CIRCUIT BOARD - electrical connectors secure. 8 <input type="checkbox"/> SUSPENSION - adjust. 9 <input type="checkbox"/> NUTS, BOLTS, OTHER FASTENERS - check - tighten. *10 <input type="checkbox"/> ENGINE GEAR LUBRICATION - check level - add recommended oil as required. 11 <input type="checkbox"/> FUEL/IMPULSE LINES - secure and no kinks. 12 <input type="checkbox"/> ENRICHENER CONTROL - check/adjust. *13 <input type="checkbox"/> OIL PUMP - check/adjust. 14 <input type="checkbox"/> THROTTLE CABLE - check/adjust. *15 <input type="checkbox"/> CARB SYNCHRONIZE - check/adjust (twin carb models). *16 <input type="checkbox"/> FAN BELT - check/adjust (axial fan models). *17 <input type="checkbox"/> OIL TANK - fill w/recommended brand injection oil - check for leaks.	*18 <input type="checkbox"/> OIL LINE TO PUMP - (all oil injection models) bleed - secure *19 <input type="checkbox"/> ENGINE COOLANT - check level. 20 <input type="checkbox"/> SPARK PLUGS - check/gap. 21 <input type="checkbox"/> GAS TANK - fill (pre-mix 40 to 1 BIA approved oil SA & SB models only) - check for leaks. 22 <input type="checkbox"/> CARBURETOR AIR SCREW - adjust. 23 <input type="checkbox"/> CARBURETOR IDLE SPEED - adjust. *24 <input type="checkbox"/> PRIMER - check operation. 25 <input type="checkbox"/> IGNITION TIMING - check/adjust. 26 <input type="checkbox"/> ELECTRICAL SYSTEM - check operation - adjust <input type="checkbox"/> Headlight <input type="checkbox"/> Brake Light <input type="checkbox"/> Taillight <input type="checkbox"/> Instrument & Indicator Lights 27 <input type="checkbox"/> TRACK - adjust tension - align.	PREPARATION BY: _____ <div style="text-align: right;">Signature</div>
TEST RIDE		
1 <input type="checkbox"/> CONTROL CABLES - throttle, brake - works without binding in any steering position - returns freely. 2 <input type="checkbox"/> ENGINE STOP SWITCH - check operation. 3 <input type="checkbox"/> SUSPENSION - check slider ride adjustment. 4 <input type="checkbox"/> STEERING - action is free lock to lock - no looseness. 5 <input type="checkbox"/> ENGINE - recoil starter works properly, engine starts promptly, good throttle response and return. Exhaust smoke present but not excessive (oil injection models). 6 <input type="checkbox"/> CLUTCHES - smooth operation - correct RPM. 7 <input type="checkbox"/> BRAKES - adequate - smooth stopping power.	8 <input type="checkbox"/> SPEEDOMETER/TACHOMETER - check operation. 9 <input type="checkbox"/> NO UNUSUAL NOISES. *10 <input type="checkbox"/> NO COOLANT LEAKS. 11 <input type="checkbox"/> NO FUEL OR OIL LEAKS. *12 <input type="checkbox"/> COOLANT LEVEL - check - add 50/50 mix as required. 13 <input type="checkbox"/> CONTROLS - properly positioned.	TEST RIDDEN BY: _____ <div style="text-align: right;">Signature</div>
CUSTOMER DELIVERY		
1 <input type="checkbox"/> OWNER'S MANUAL - explain contents/proper maintenance - install. 2 <input type="checkbox"/> OWNER'S SAFETY HANDBOOK - explain contents - install. 3 <input type="checkbox"/> WARRANTY CERTIFICATE - explain warranty thoroughly - install.	4 <input type="checkbox"/> CONTROLS - explain location/operation - properly positioned for customer.	DELIVERED BY: _____ <div style="text-align: right;">Signature</div>
DEALER VERIFICATION		
Dealer Name _____	Signature of Dealership Manager _____	
Address _____	Date _____	
* Applicable models only - refer to assembly instruction provided by Kawasaki for specific models. P/N 49007-3501 white copy - dealer file/canary copy - owner Printed in U.S.A.		
If it is desired to utilize the French portion of this check list, please remove the carbon sheet and insert in proper location.		

Assembly

Uncrate

Observe this **CAUTION** during next step
Bend over all exposed crate fasteners to prevent personal injury or possible vehicle damage.

Using a pry bar, separate the top and side panels from the crate. Carefully remove plastic covering from the snowmobile by cutting the plastic along the base of the crate. Remove the windshield from the seat. Next, unscrew the nuts securing the ski assembly and spindle to the bottom of the crate and discard the hardware as it will not be used during snowmobile assembly. (See Figure 1.)



1. Ski Assembly
2. Ski Spindle

Observe this **WARNING** during next step
To prevent personal injury, use lifting equipment with approved safety hooks when raising the snowmobile.

With assistance, or the use of a hoist, carefully lift the snowmobile from the crate. Thoroughly inspect the snowmobile for shipping damage and missing parts.

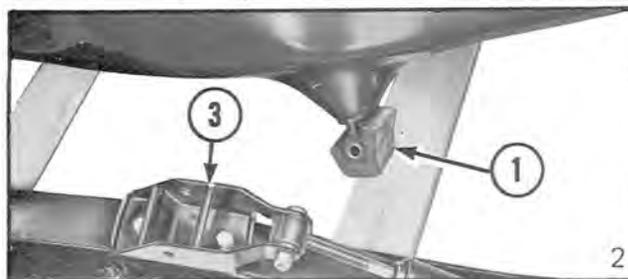
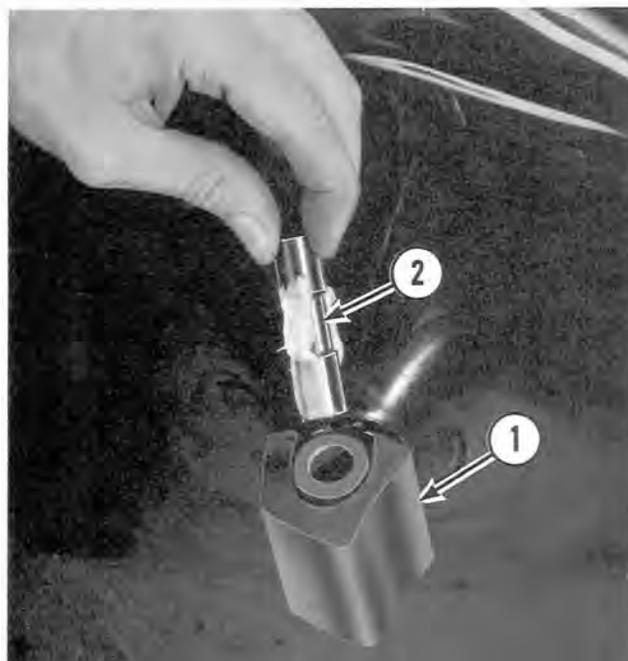
Open hood and remove plastic bag from storage case containing the ski and windshield mounting hardware.

Skis

Installation

Place the snowmobile on its side. Be sure to provide a protected surface to prevent marring the finish of the snowmobile. Then perform the following:

1. Install the ski attitude damper. Apply Silicone spray or soapy water on the damper to ease installation of the ski saddle over the damper. (See Figure 2.)



1. Ski Attitude Damper
2. Grease Groove
3. Ski Saddle

2. Fill the grease groove or cut away area of the spindle sleeve with a low temperature extreme pressure (ep) grease, and insert sleeve into the spindle. (See Figure 2.)

- Secure the ski assembly to the spindle with the hardware supplied. Be sure the nut and large flat washer are installed on the inboard side of the ski assembly, then torque the nut 45 - 47 ft. lbs. (6.2 - 6.5 kg-m). (See Figure 3.)



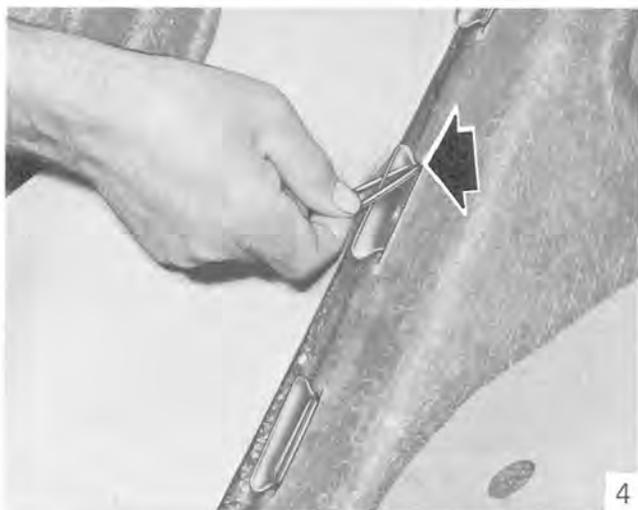
1. Flat Washer

Suspension

The snowmobile is shipped with the suspension springs adjusted during production assembly to provide satisfactory ride and handling characteristics for average driver weight. Normally, no adjustments are required.

Windshield

Remove the plastic covering and install the windshield with the o-ring fasteners provided. (See Figure 4.)



Handlebar

Prior to securing the handlebars, check the lower handlebar holder for security to the steering pole. Apply 35 ft. lbs. (5 kg-m) torque to the lower handlebar holder mounting bolt. (See Figure 5.)



- Lower Handlebar Holder
- Console

Check the routing of the cables and wire harnesses for proper positioning. They should pass through the console at the handlebar holder, and have adequate free movement to prevent binding or rubbing during vehicle operation. (See Figure 5.)

Observe this **CAUTION** during next step
Adjust the handlebar so it does not hit the windshield, when turning in either direction.

Adjust the handlebar for a comfortable driving position and evenly torque the four socket screws securing the handlebar holder, to 105 in. lbs. (1.2 kg-m). (See Figure 6.)



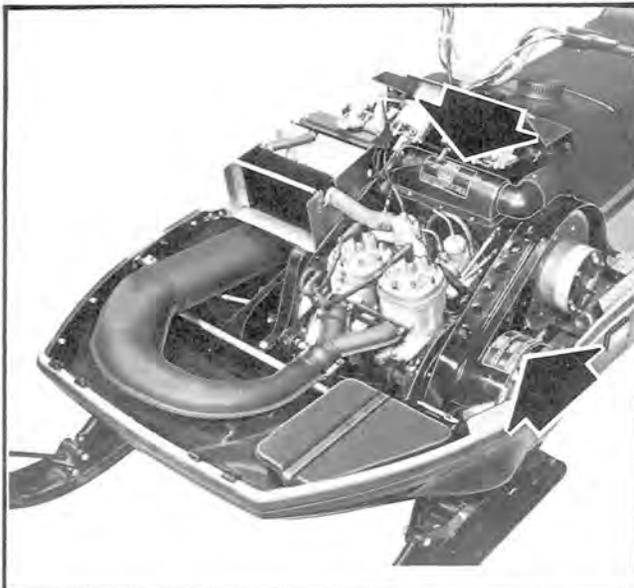
Tool Kit/Owner Manual

Check the storage box to be sure it contains the Tool Kit, Owner's Manual and Safety Handbook.

Safety Labels

WARNING

Insure that all safety labels are properly located and secure. (See Figure 7.)

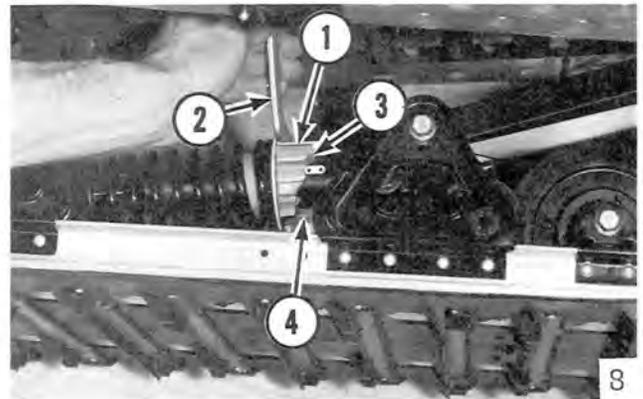


Preparation

Suspension

Ride Adjustment

Ride Adjustment may be varied by changing the position of the shock absorber spring adjusting cam, using the special tool provided in the tool kit. Rotating the cam towards the heavy pre-load position will increase spring pre-load, resulting in a stiffer ride. If the cam is rotated towards the light pre-load position, this will decrease spring pre-load, resulting in a softer ride for the operator. (See Figure 8.)



1. Spring Cam
2. Cam Adjusting Tool
3. Heavy Pre-load Position
4. Light Pre-load Position

NOTE: An optional heavy-duty shock absorber spring kit is available to increase the load carrying capacity of the snowmobile.

Handling Adjustment

The handling adjustment is controlled by changing spring tension of the front suspension springs. Increasing spring tension causes the suspension to press harder on the ground, resulting in less ski pressure. Reducing the spring tension, causes the front of the suspension to have less pressure on the ground and the ski pressure to increase. A change in ski pressure will affect the vehicle's steering response.

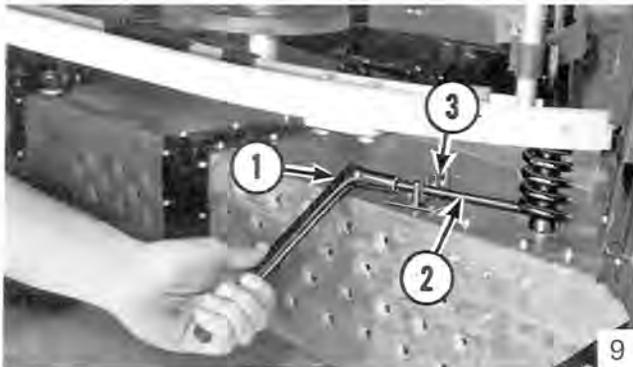
CAUTION

The tension (pre-load) of the front springs on each side of the suspension arm must be equal. Excessive tension of one spring can cause spring breakage or excessive wear to one side of the slide wear strips. (See Figure 9.)

The spring arm on each side of the suspension should be positioned as required, to achieve the desired steering response and effort for existing terrain and snow conditions in your area.

To change spring tension:

1. Install spring adjusting tool, Part No. 57001-3507 onto the end of the spring arm as shown. (See Figure 9.)



1. Spring Adjusting Tool
2. Spring Arm
3. Spring Retainer

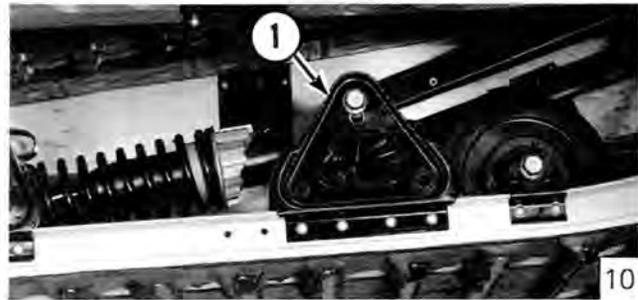
Observe this **WARNING** during next step

Front suspension springs are under heavy spring load and improper adjusting techniques may result in personal injury.

2. Apply a firm grip on the spring adjusting tool with both hands and carefully lift the spring arm out of the detent in the spring retainer. Be prepared for the heavy spring load to be transferred to the spring adjusting tool as the spring arm is lifted out of the retainer detent.
3. Install the spring arm into the retainer detent necessary to obtain the handling characteristics desired.

Front Suspension Swing Arm

Changing the mounting position of the front swing arm will affect the amount of ski lift along with the ride characteristics of the snowmobile. During factory assembly, the front swing arm was positioned in the upper hole of the front suspension bracket. This position was selected since it results in the best overall riding characteristics of the snowmobile. (See Figure 10.)



1. Front Suspension Bracket

If swing arm location is changed to the lower mounting hole, the snowmobile becomes more sensitive to weight transfer during acceleration, resulting in slightly more ski lift.

WARNING

Front suspension arm is under heavy spring load. Remove spring tension from the front suspension springs before relocating the front swing arm assembly to prevent possible personal injury.

Ski Spring Preload

Three positions have been provided for the front ski spring mounting bolt:

Center Hole Position - During factory assembly, the bolt was installed in the center hole in the ski and normally no change is required for general snowmobiling. (See Figure 11.)



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1. Spring Mounting Positions

Rear Hole Position - Installation of the bolt in the rear hole of the ski will reduce spring preload, increase the spring arch, and result in a softer ride with greater spring travel. This position is recommended for deep snow operation or slow speed trail riding.

Front Hole Position - Placing the bolt in the front hole of the ski will increase spring preload, reduce the spring arch, and result in a stiffer ride with less spring travel. This position should be used for maximum stability during high speed operation.

NOTE: Always mount the front ski spring bolt into the same position on each ski.

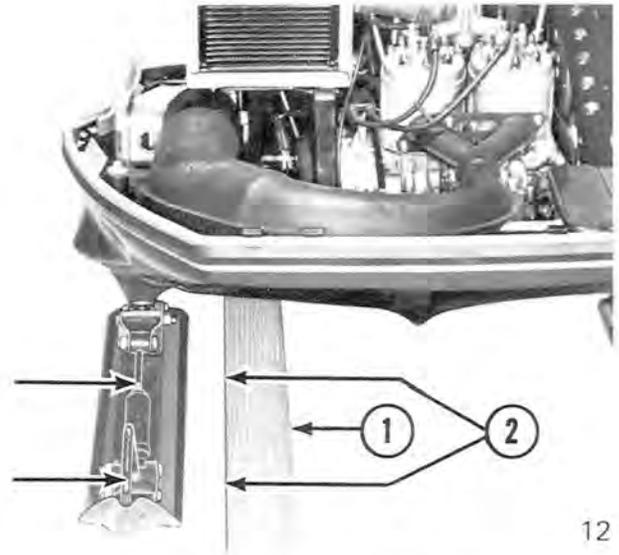
To change the preload of the ski spring, be sure the weight of snowmobile is on the skis, and proceed as follows:

1. Remove nut from front spring mounting bolt.
2. Open hood and with assistance from another, stand on front bumper to relieve spring tension from mounting bolt.
3. With weight still on front bumper, remove bolt, slide spring rub strip to align with desired hole position of ski, and insert bolt.
4. Install nut and torque 25 in. lb. (0.29 kg-m).

Steering Alignment

Check the ski alignment and handlebar centering.

1. Place a long board (or suitable straight edge) against the right hand edge of the track, and measure the distance between the board and center line of the ski. Position the ski so that the distance measured between the ski center line and edge of board is the same at the front and rear of the ski. (See Figure 12.)

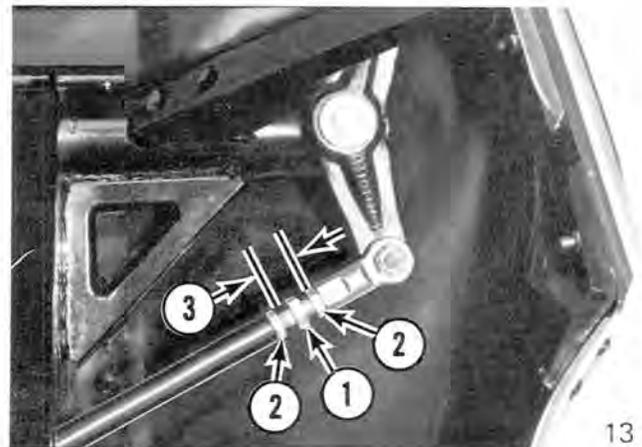


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1. Straight Edge Against Track
2. Measure Distance Here

2. When the center line of the ski is parallel to the outside edge of the track, check the steering handlebar for centering.
3. If the handlebar requires centering, loosen the lock (jam) nuts and turn the tie rod length adjusting stud in the direction necessary to center the handlebar. (See Figure 13.)

NOTE: Be sure the center line of the ski remains parallel to the straight edge while turning the tie rod length adjusting stud.



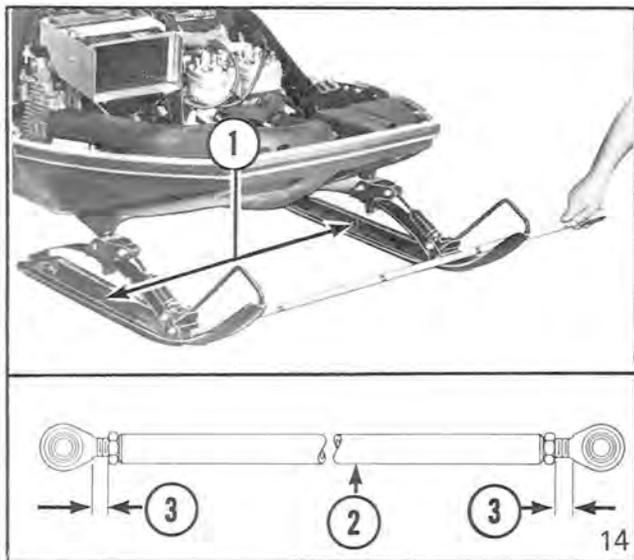
13

1. Tie Rod Length Adjusting Stud
2. Locknuts
3. 1-1/4 Inch (32 mm) Maximum

WARNING

The dimension shown in Figure 13 must not exceed 1-1/4 inches (32 mm) and the adjusting stud must remain centered between the two lock nuts, to prevent possible steering linkage failure.

4. To align the other ski, move both ski tips towards the center of the snowmobile to remove the steering linkage play. Loosen the lock nuts and turn the tie rod to obtain an equal distance from ski center to ski center when measured at the front and rear of the skis. (See Figure 14.)



1. Equal Distance Front And Rear
2. Tie Rod
3. Exposed Threads

WARNING

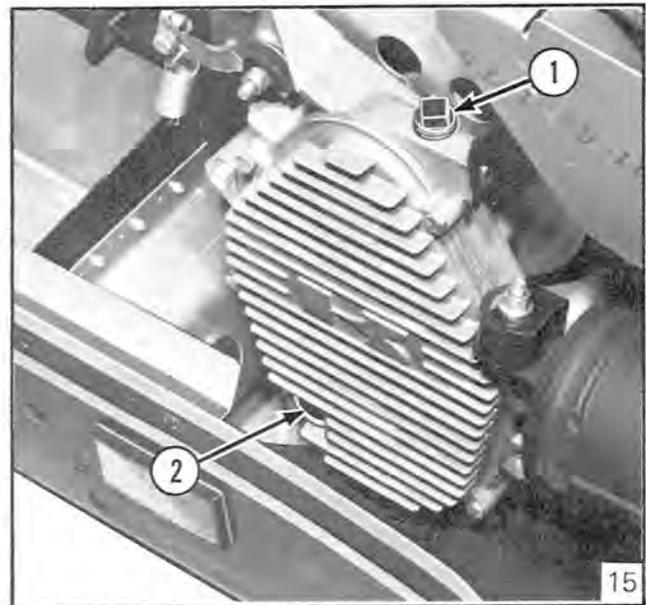
After proper alignment is obtained, check the number of exposed threads at each rod end. If the left hand and right hand rod ends are not adjusted equally, possible steering linkage failure may occur. (See Figure 14.)

5. Tighten all the hardware (nuts, bolts, etc.) in the steering system. Torque the lock (jam) nuts on tie rod assemblies 100 - 120 in. lbs. (1.1 - 1.4 kg-m). Refer to the torque chart for recommended torque values of other fasteners in the steering system.

Chaincase

NOTE: Use DEXRON II Automatic Transmission Fluid when filling the chaincase.

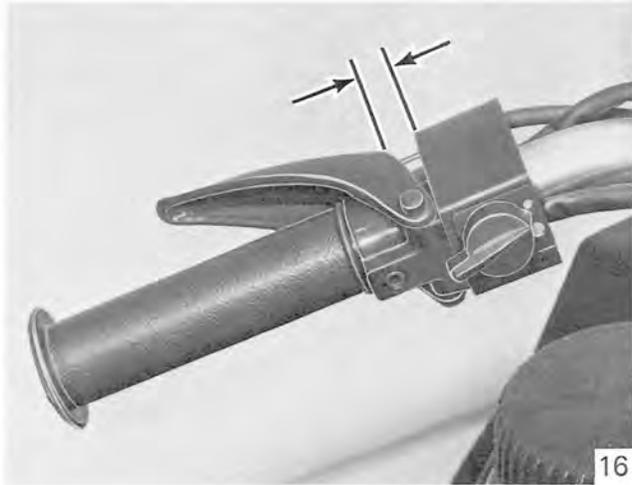
Check the chaincase fluid level. Fluid level must be between the center and the top of the sight gauge. If additional fluid is required, remove the upper plug in the chaincase and pour DEXRON II Automatic Transmission Fluid into the chaincase until correct level is attained. This provides the proper lubrication for the chain and bearings. (See Figure 15.)



1. Upper Fill Plug
2. Fluid Level Sight Gauge

Brake

Check to be sure the brake disc can be moved back and forth with just a very slight drag on the brake pads. Next, check that the brake lever movement is less than 3/4 inch (19 mm) when brakes are fully applied. (See Figure 16.)



NOTE: Do not disturb brake cable adjusting nuts. The cam (arm) must be centered on the pins in the off position. Improper adjustment will result in incorrect brake function and premature wear.

The brake disc and hub assembly must float (free movement from left to right) on jackshaft to maintain proper alignment between the brake pads. This movement may result in a rattle heard during vehicle operation and is a normal condition.

Wiring Harness

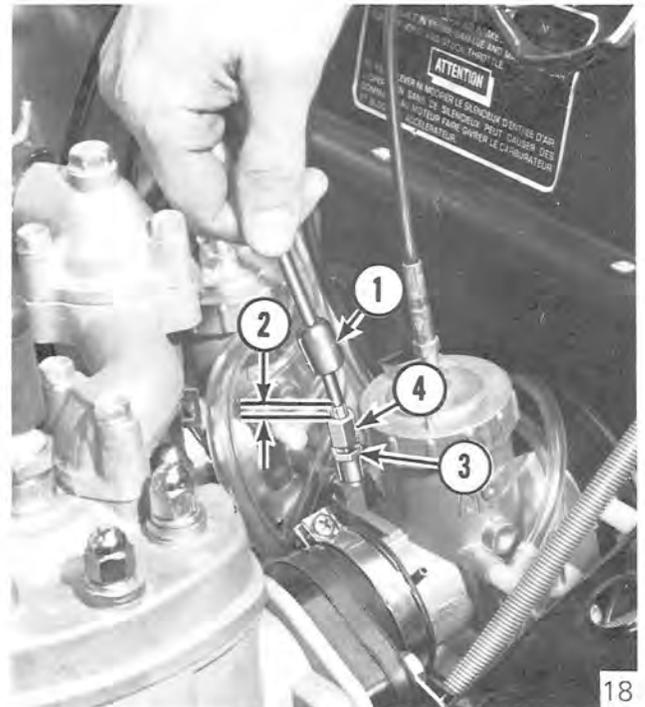
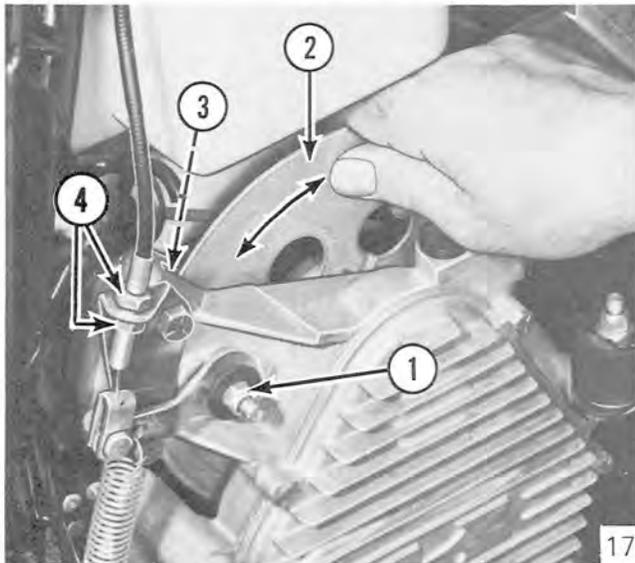
Check the connectors on the wiring harness to be sure they are properly located and secure.

Enrichener Cable Adjustment

With the Enrichener lever down, and plastic boot slid up the casing, the enrichener cable should have 1/16 inch (1.5 mm) free movement when raised as shown. (See Figure 18.)

Observe this **WARNING** during next step
DO NOT OVERTIGHTEN the brake because damage to components, or personal injury could result.

If the brake lever movement exceeds 3/4 inches (19 mm), adjust the brake by tightening the brake adjusting nut while simultaneously moving the brake disc back and forth until the brake pads just begin to move with the disc. (See Figure 17.)



1. Brake Adjusting Nut
2. Brake Disc
3. Brake Pads
4. Brake Cable Adjusting Nuts

1. Plastic Boot
2. 1/16 inch (1.5mm)
3. Locknut
4. Adjusting Screw

If adjustment is required, loosen the lock nut and turn the adjusting screw to obtain the correct movement. After adjustment or checking, reposition boot over enrichener fitting to prevent foreign matter from entering the enrichener system.

NOTE: Engine flooding may occur if the Enrichener Cable free movement is less than 1/16 inch (1.5 mm)

Engine Coolant

Observe this **CAUTION** during next step

Approximately 1/8 in. (3.18 mm) of coolant will always appear on the floor of the reservoir tank. To be sure the coolant level is adequate, always fill to within 1/4 - 1/2 in. (6 - 12 mm) of the tank top.

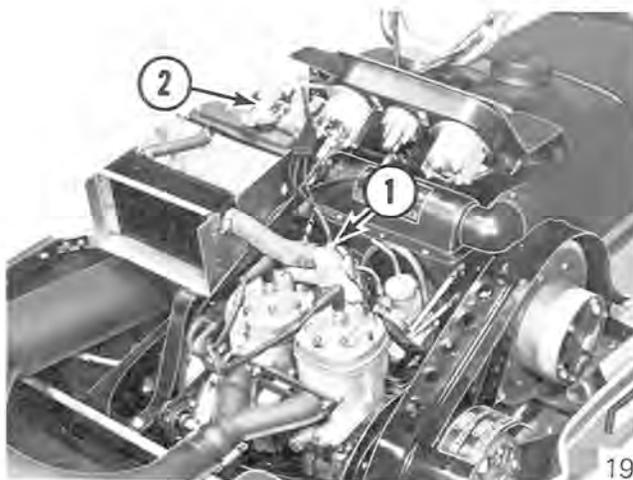
Coolant Supply - Use a 55/45 mixture of antifreeze and water (55% ETHLENE GLYCOL base antifreeze and 45% water), when filling the cooling system. This recommended mixture will protect against freezing down to approximately -50°F (-45°C). A major brand of antifreeze (such as Prestone II or Dowgard) is recommended. The coolant level must be within 1/4 - 1/2 in. (6 - 12 mm) of the tank top when cool.

Filling Cooling System

Observe this **WARNING** during next step

Use care removing the pressure cap when the engine is hot or severe burns could result. Remove pressure cap from reservoir only when engine temperature is below 120°F (50°C).

1. Remove vent plug from top of thermostat housing and pressure cap from reservoir tank. (See Figure 19.)



1. Vent Plug
2. Pressure Cap

Observe this **CAUTION** before next step

DO NOT USE 100% ANTIFREEZE OR WATER. 100% antifreeze will freeze before a 55/45 mixture of antifreeze and water.

2. Slowly fill the cooling system through the reservoir tank opening. Cooling system capacity is approximately one gallon.
3. When coolant appears at vent opening in thermostat housing, reinstall vent plug, and continue filling until level is 1/4 - 1/2 inch (6 - 12 mm) down from neck in reservoir tank. Reinstall pressure cap.

NOTE: Recheck the coolant level after running the engine, to insure coolant level remains adequate to properly cool engine.

Drive and Driven Converter

Alignment

Correct converter center-to-center distance of 12.0 inches (304.8 mm) and converter offset distance 0.525 - 0.588 inch (13.3 - 14.9 mm) is obtained when alignment gauge P/N 57001-3503 is correctly installed between drive and driven converter sheaves.

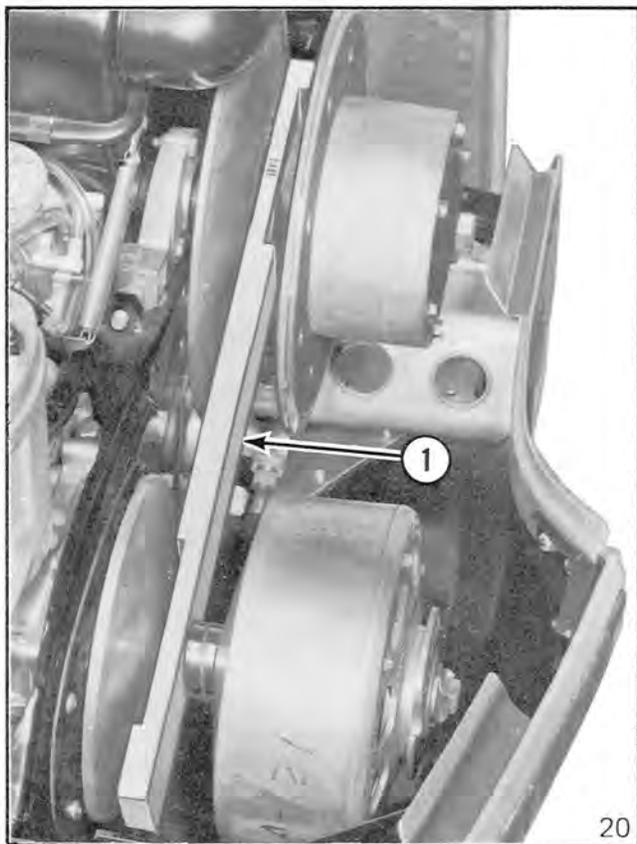
Center-To-Center Distance

NOTE: Improper handling or misuse of the alignment gauge will result in inaccurate converter alignment. Check the flatness of the alignment gauge with a straight edge prior to each use.

1. Remove the converter guard and drive belt.

NOTE: Drive belt will not be reinstalled until running tests on the engine are completed.

2. Rotate the driven converter movable sheave clockwise, and insert the alignment gauge between the sheaves with the deep notch facing the stationary sheave. Carefully release the movable sheave, allowing the spring tension to keep the gauge in position between the stationary and movable sheaves. (See Figure 20).

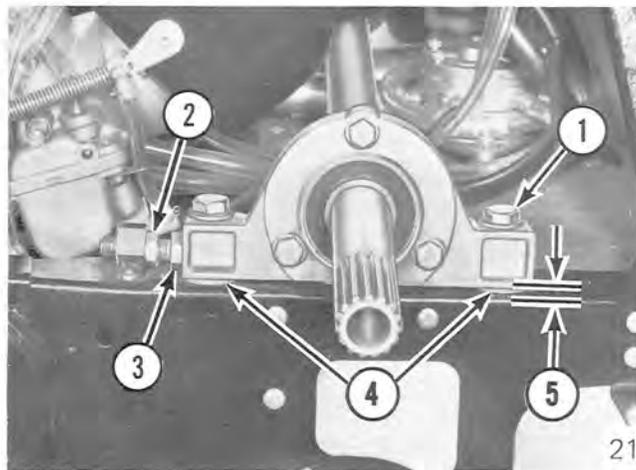


1. Alignment Gauge P/N 57001-3503

3. Center distance is correct if the notch in the alignment gauge fits over the shaft on the drive converter. (See Figure 20.)

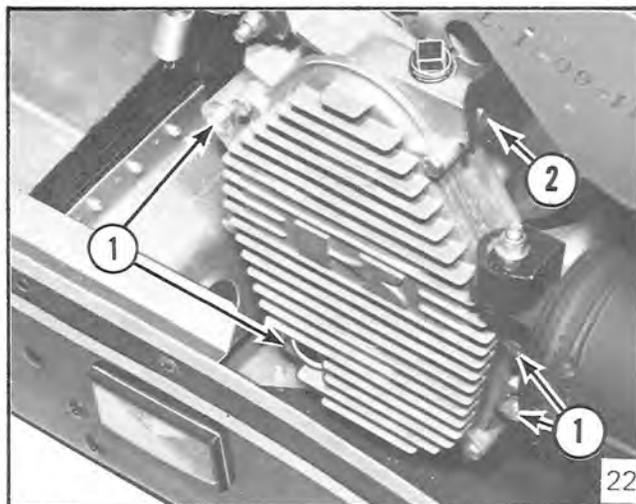
If adjustment of the converter center distance is required:

1. Loosen the jackshaft bearing retainer mounting bolts and the adjusting bolt locknut. (See Figure 21.)



1. Bearing Retainer Mounting Bolts
2. Adjusting Bolt Locknut
3. Adjusting Bolt
4. Bearing Retainer Shims
5. Parallel

2. Loosen the four chaincase mounting bolts and three bolts securing the radiator brace bracket assembly to the chassis and chaincase. (See Figure 22.)



1. Chaincase Mounting Bolts
2. Radiator Brace Bracket Bolt

3. Move the jackshaft bearing retainer and chaincase forward or rearward, as required, to obtain 12.0 inches (304.8 mm) center distance.
4. To insure correct center distance is maintained, turn the adjusting bolt so the head of the bolt contacts the jackshaft bearing retainer flange, and tighten the locknut. (See Figure 21.)

CAUTION

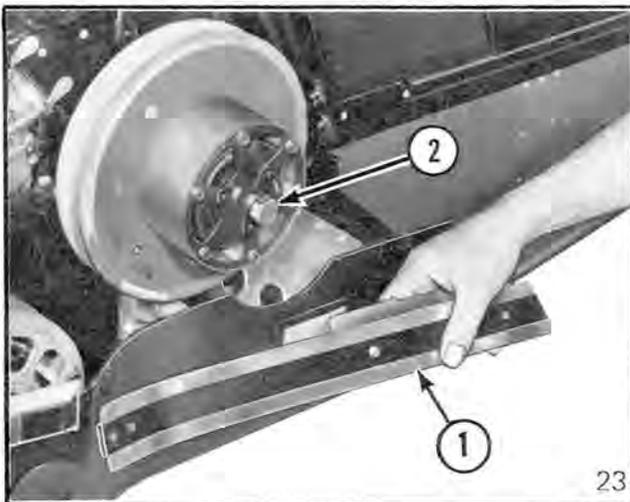
To prevent premature jackshaft bearing failure, reshim the bearing retainer after changing center distance.

5. Tighten all bolts and nuts for the chaincase and radiator brace bracket assembly, then perform procedures listed under Jackshaft Bearing Retainer Shimming.

Jackshaft Bearing Retainer Shimming

After adjusting center-to-center distance, shim the jackshaft bearing retainer as follows:

1. Remove the left side aluminum trim from lower pan and unscrew the bolt securing driven converter to the jackshaft. (See Figure 23.)



1. Aluminum Trim
2. Retaining Bolt

2. Remove the shims below the bearing retainer. (See Figure 21.)

3. Position the bottom of the retainer parallel to the top surface of the chassis. (See Figure 21.)

CAUTION

Observe this **CAUTION** during next step

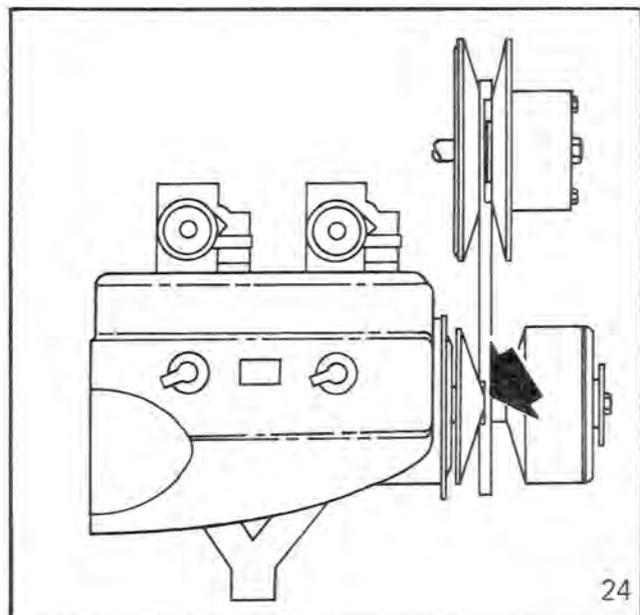
The bearing retainer should be shimmed until the jackshaft centerline is 6.62 inches (168.15 mm) above the track drive shaft centerline.

4. Install "U" shaped shims, as required, to fill the space between the bottom of retainer and top of chassis. This procedure prevents excessive preloading of the jackshaft bearings.
5. Tighten all bolts and nuts on the jackshaft bearing retainer.
6. Position the driven converter onto the jackshaft and check Converter Offset Distance.

Converter Offset Distance

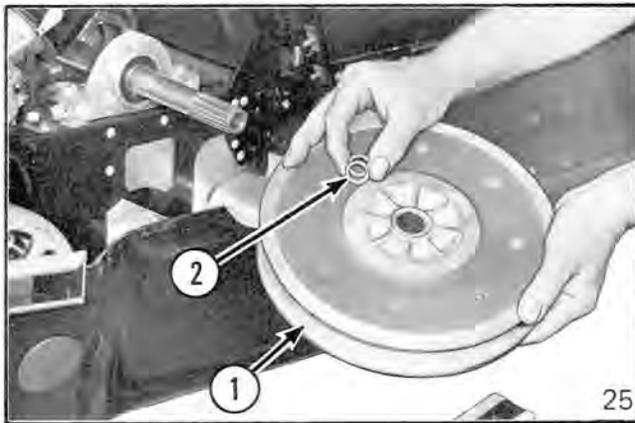
After checking center-to-center distance, inspect for proper converter offset.

Correct offset distance is obtained when the surface of the shallow notch on the alignment gauge touches the base of the fixed sheave of the drive converter. (See Figure 24.)



If adjustment to the offset distance is required:

1. Remove the left side aluminum trim from lower pan, and unscrew the bolt securing driven converter to the jackshaft. (See Figure 23.)
2. Slide the driven converter from jackshaft and add or remove shims, as required, from the bore of driven converter to obtain correct converter offset. (See Figure 25.)



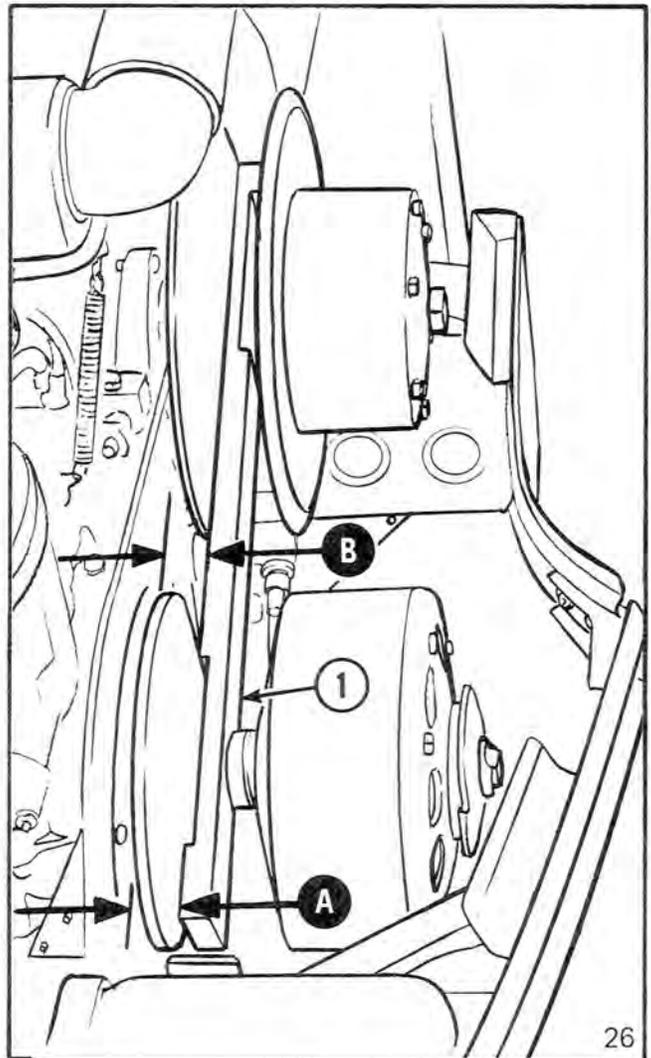
1. Driven Converter
2. Shims

AVAILABLE SHIMS	
P/N	THICKNESS
92025-3501	.032 INCH (0.8 mm)
92025-3502	.063 INCH (1.6 mm)
92025-3503	.100 INCH (2.5 mm)

3. Reinstall driven converter and torque mounting bolt 40 - 50 ft. lbs. (5.5 - 6.9 kg-m).
4. Position aluminum trim onto the lower pan and secure with screws and nuts. Be sure the special washers are installed under the head of each screw to prevent damaging the decal pattern on the aluminum trim.
5. Inspect drive and driven converters for correct parallelism.

Parallelism

1. After checking the center-to-center and offset distance, parallelism must be checked by measuring dimensions A and B as shown. (See Figure 26.) Compare dimensions A and B against Notes I and II.



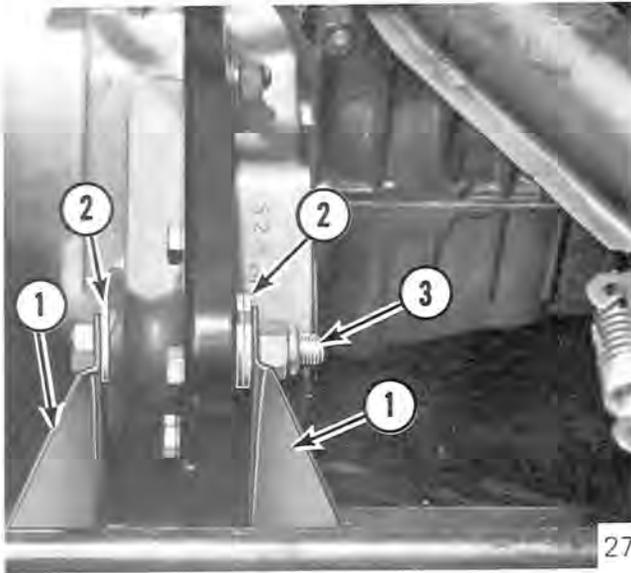
1. Alignment Gauge P/N 57001-3503

NOTE I: Dimension A must be equal to or more than dimension B.

NOTE II: Dimension A must never exceed dimension B by more than 0.02 inch (0.5 mm).

2. If dimension A is less than dimension B, parallelism between the drive and driven converters is not correct. Parallelism must be adjusted as follows:

- a. Loosen the large bolt in each of the two engine mounts on the right side of the engine.
- b. Move the right side of the engine either toward the front or rear, whichever is necessary. After the converters are parallel, install the shims as required on either side of the mount to fill the space between the engine mount and the slotted engine mount brackets on the chassis. (See Figure 27.)



1. Engine Mounting Bracket
2. Shims
3. Engine Mount Bolt

- c. Securely tighten the large bolts in the two engine mounts after parallelism is obtained. (See Figure 27.)

Oil Tank

We recommend using Kawasaki Snowmobile Oil. This oil is specially formulated to give minimum piston ring varnish and combustion chamber deposits along with excellent lubrication qualities.

In an emergency situation when Kawasaki Snowmobile Oil is not available, a B.I.A. certified TC-W oil may be substituted. All certified oils will indicate the TC-W rating on the container. If the B.I.A. certification does not appear on the container, the oil must not be used.

The use of lubricants such as "tune-up tonics" and "super oils" are NOT RECOMMENDED.

The oil tank has no filter. DO NOT ALLOW DIRT TO ENTER WHILE FILLING. Oil tank capacity is 2-1/2 quarts (2.37 liters).

Check the oil tank vent tube for:

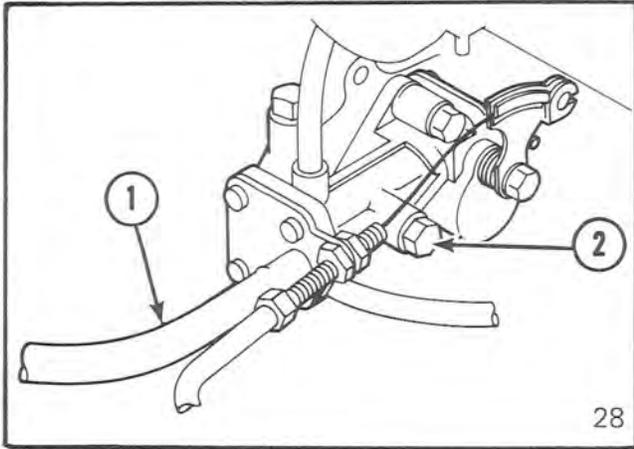
1. Proper Routing - Sharp bends or kinks in the vent tube will reduce oil flow to the oil pump.
2. Tie Band Installation - Tie band may pinch off tube, reducing oil flow to the oil pump, if installed too tight.
3. Vent Tube Position - To prevent siphoning action possible under certain conditions position end of vent tube higher than top of oil tank and away from brake components (disc and pads).

Observe this **CAUTION** during next step
Failure to bleed out air trapped in the oil line can cause severe engine damage.

Bleeding Oil Injection System

After filling the oil tank for the first time, bleed the air from oil pump inlet tube as follows:

1. Remove the instrument panel mounting screws to provide the additional clearance needed and remove the air silencer assembly.
2. Loosen the clamp screw and separate the left hand carburetor from its rubber holder.
3. Remove the bleed screw from the side of the oil pump and allow oil to drain until all the air bubbles are removed from the inlet tube. Visually check the entire length of the tube to be sure that all of the air has been removed; then reinstall bleed screw. (See Figure 28.)



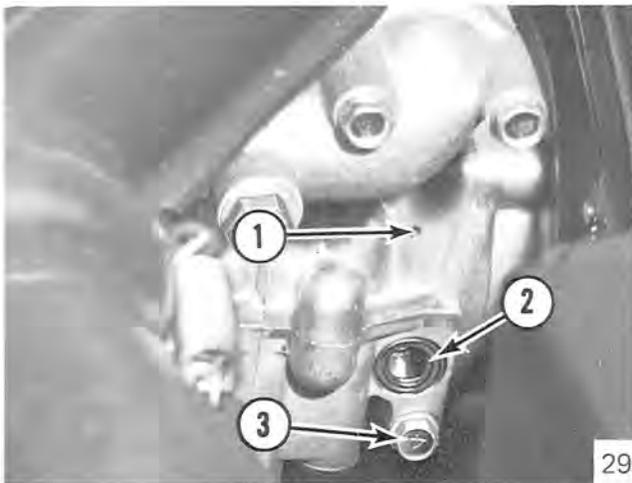
1. Oil Pump Inlet Tube
2. Bleed Screw

NOTE: Reinstall the left hand carburetor after performing Engine Gearcase servicing. Air silencer assembly should not be installed until Purging Air from Oil Pump Outlet Tubes procedure is completed.

Engine Gearcase

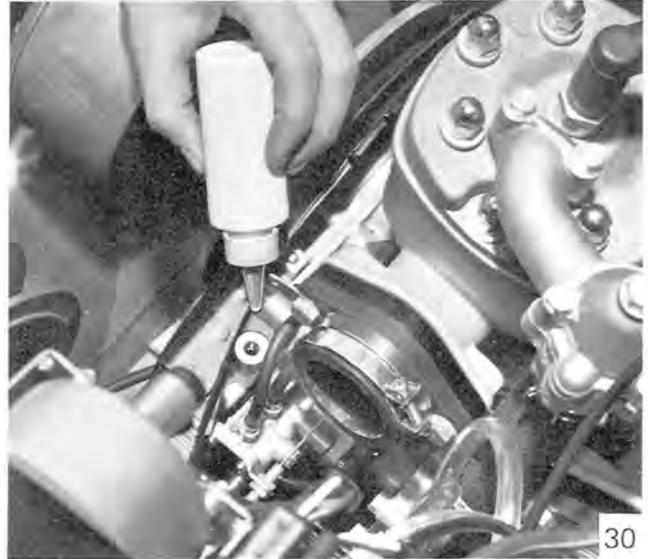
Components inside the gearcase drive the oil injection pump and coolant pump.

Lubricant level is correct when the oil appears above the center of the sight gauge, but not higher than the top. (See Figure 29.)



1. Breather Hole
2. Oil Level Sight Gauge
3. Drain Plug

To fill or add lubricant to the gearcase, remove fill plug (located on top of gearcase) and pour Shell XL100 10W30 non-foaming engine oil into the filler opening to raise lubricant to proper level. Gearcase capacity is approximately 1.35 oz. (40 cc). (See Figure 30.)



NOTE: The carburetor has been removed during the previous procedure.

After filling the engine gearcase, reinstall carburetor into rubber holder. Position carburetor so that float bowl does not contact front frame and tighten clamp screw.

NOTE: The air silencer assembly should not be installed until Purging Air from Oil Pump Outlet Tubes procedure is completed.

Engine gearcase oil should be drained after the initial 100 miles of engine operation, and at the end of each season, to remove any impurities or foreign matter present in the gearcase cavity. To drain the gearcase, remove drain plug. (See Figure 29.)

Observe this **CAUTION** during next step
 Failure to remove obstructions from gearcase breather hole may cause excessive oil consumption resulting in extensive engine damage. (See Figure 29.)

To insure proper operation of the oil seal between the engine gearcase and crankcase, check for accumulated obstructions in the gearcase breather hole, located above the gearcase sight gauge.

Fuel

Use regular or premium leaded gasoline with a minimum PUMP POST OCTANE NUMBER OF 89.

WARNING

Gasoline fumes are heavier than air and can become explosive if exposed to a pilot light from a furnace, hot water heater, clothes dryer, etc. Fill the fuel tank only in an area that is well ventilated and free from pilot lights and sparks.

Before removing filler cap from the fuel tank, remove any ice, snow, or water from around the fuel tank opening to prevent contamination of fresh fuel mixture.

Fill the fuel tank slowly and pour the fuel into the tank using a funnel with a fine mesh screen.

CAUTION

Each time the fuel tank is filled with gasoline, antifreeze must be added to the fuel system. Moisture contained in fuel system components (fuel tank, lines, fuel pump or carburetor) could freeze and may result in severe damage.

A major brand of Gasoline Antifreeze (such as Heet) should be added to the fuel tank by following the manufacturer's recommendations on the container for proper mix ratio of gasoline with antifreeze. (See Figure 31.)



Fuel/Oil Mixture (Ratio)

The fuel-to-oil ratio required is automatically controlled at the engine oil pump.

The oil pump is a variable ratio pump; at idle, the fuel/oil ratio is approximately 110 to 1 increasing with throttle position to approximately 25 to 1 at maximum power.

CAUTION

Each time gas tank is filled—check for adequate oil level in the oil tank. A full oil tank assures proper fuel/oil ratio will be maintained to prevent serious engine damage.

Engine Break-In

To insure adequate lubrication of internal engine components during early break-in, a 25-to-1 gasoline-to-oil ratio is recommended for the first three (3) gallons of gasoline. This ratio can be obtained by thoroughly mixing 1 pint (0.47 liter) of Kawasaki Snowmobile Oil with three (3) gallons (11.4 liters) of gasoline. Pre-mixing gasoline and oil will no longer be required after the initial three gallons of gasoline and oil mix have been consumed.

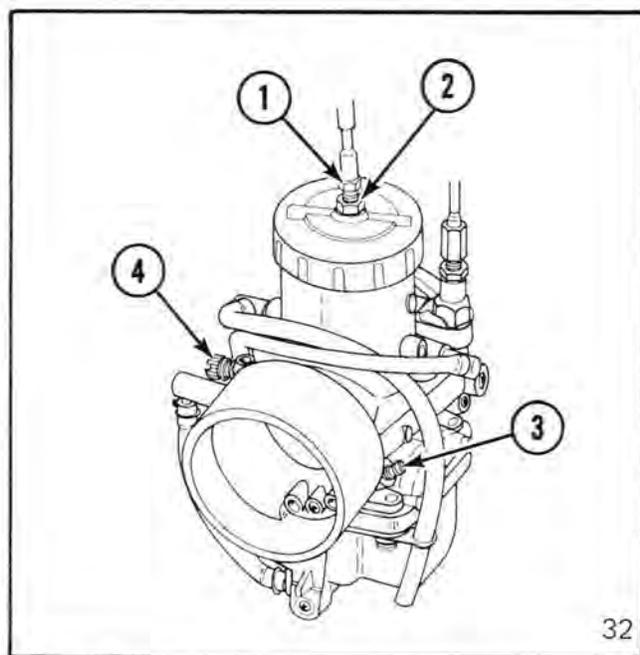
For proper engine break-in, run the machine on hard packed snow at approximately 3/8 to 1/2 throttle, with occasional bursts to full speed. Limit the full speed operation to 1-1/2 to 2 minutes, then return to cruising speed for 10 to 15 minute intervals. After 10 hours of operation or two tanks of gasoline are used, break-in is complete.

Synchronization of Oil Pump and Carburetors

Synchronization of the oil pump and carburetors is extremely important to assure adequate engine lubrication and peak performance.

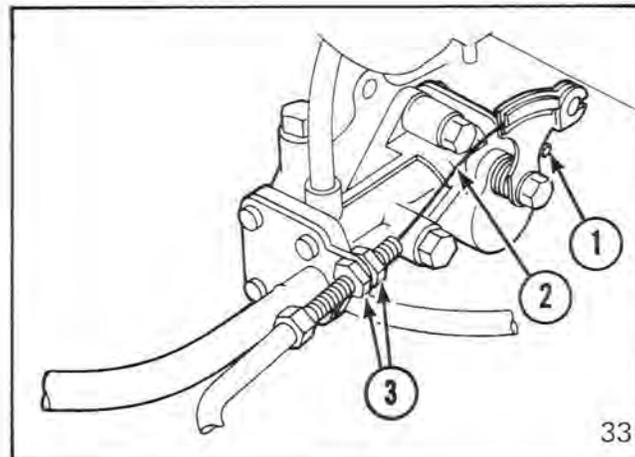
Remove the instrument panel mounting screws and the air silencer assembly. Remove the drive belt and perform the following procedure.

1. Loosen the idle stop screws so that both throttle slides bottom-out in the carburetor bores. (See Figure 32.)



1. Throttle Cable Adjusting Screw
2. Adjusting Screw Locknut
3. Air Screw
4. Idle Stop Screw

2. Push the oil pump lever forward until it contacts the stop pin; this insures the oil pump is at the dead idle position. (See Figure 33.)



1. Lever Stop Pin
2. Slack Removed
3. Cable Locknuts

3. Adjust the throttle cable on the LH carburetor so that all of the slack is removed. The throttle slide should begin to raise as soon as the throttle lever on the handlebar is advanced. (See Figure 32.)
4. Loosen the locknuts on the oil pump cable and, while holding the oil pump lever against the stop pin, remove all the slack. Adjustment is correct when the lever on the oil pump and the throttle slide in the LH carburetor move simultaneously as the throttle control lever is activated. (See Figure 33.)
5. Adjust RH carburetor throttle cable so that oil pump lever and both throttle slides move simultaneously as the throttle control lever is activated.
6. Turn the idle stop screws, on both carburetors, in until the spring is coil bound. Then, back off each screw six complete turns (initial adjustment). Air screw is properly adjusted when opened 1.5 turns off its seat.
7. Perform steps under Purging Air From Oil Pump Outlet Tubes.

Purging Air From Oil Pump Outlet Tubes

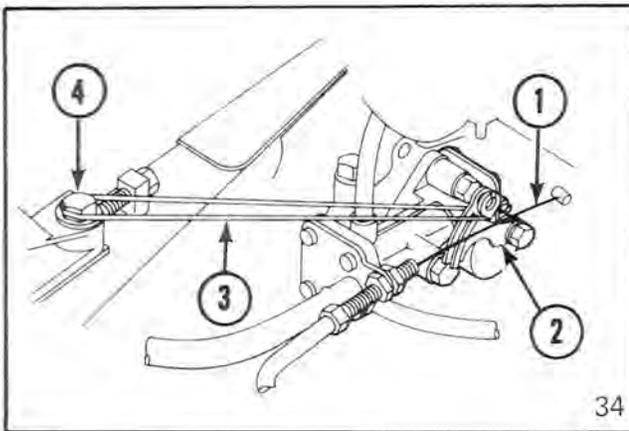
Remove the instrument panel mounting screws and the air silencer assembly. Remove the drive belt and perform the following procedure.

Any air bubbles in the oil pump outlet tubes will cause serious internal engine damage. Purge the air from these tubes as follows:

Observe this **WARNING** during next step

Failure to disconnect the oil pump control cable when performing this procedure will damage the cable. The damaged oil pump control cable will prevent the throttle from returning to the idle position, resulting in automatic clutch engagement when the engine is started, which may lead to personal injury.

1. The oil pump inner control cable must be disconnected from the control lever on the oil pump to prevent damage to cable. Do not disturb the cable locknuts when removing the inner cable. (See Figure 34.)



1. Oil Pump Inner Control Cable
2. Oil Pump Control Lever
3. Rubber Band
4. Mount Bolt

2. Attach a rubber band to hold the oil pump control lever in the wide open position. This will cause the maximum flow of oil through the outlet tubes. (See Figure 34.)

Observe this **CAUTION** during next step

Never run the engine with the air silencer removed from the carburetor. Poor engine performance and engine damage will result.

3. Temporarily position the air silencer onto the carburetor assemblies and secure converter guard into proper position with clip pins.
4. Start the engine and turn both idle stop screws equally, to obtain engine idle speed of 3,000 R.P.M. Stop the engine after it has idled for one minute. This is ample time to purge all the air from the oil pump outlet tubes.
5. Remove the air silencer assembly; release the rubber band, and reconnect the oil pump inner control cable to the lever. Be sure to check the operation of the oil pump control lever and cable by activating the throttle control lever on the handlebar.
6. Install the air silencer assembly onto the carburetors and check that the rubber seals between air silencer body and carburetors fit securely during installation.

NOTE: On SS440 models, properly position the plastic adapters on the carburetors prior to air silencer installation, to prevent breakage of the plastic econo jet fitting.

7. Secure the air silencer into position with four springs. Install long springs on upper silencer tab retainers and short springs on lower silencer tab retainers.
8. Install the mounting screws to secure the instrument panel assembly.

Ignition Timing Check

Remove the drive belt prior to performing the following procedure.

1. Install a fabricated timing pointer onto the engine. For accuracy, it is important to attach the pointer to the engine rather than the chassis, so the pointer can move with the engine. (See Figure 35.)



35

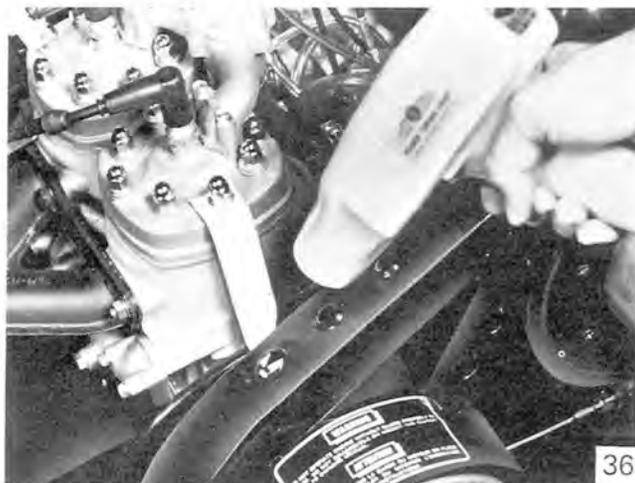
2. Remove both spark plugs and install a dial indicator into the RH cylinder spark plug hole.
3. Rotate the drive converter in the normal direction of rotation (counterclockwise) to find TDC. Next, turn the drive converter clockwise to 0.108 inch (2.75 mm) before TDC. Make a mark on the drive converter fixed sheave opposite the timing pointer. (See Figure 35.)
4. Remove dial indicator and before installing spark plugs, check that:
 - a. Plug gap is properly adjusted to 0.024 inch (0.66 mm).
 - b. Be sure washer is installed on plug and the seat on the cylinder head is clean.

Install spark plugs and apply 18 - 20 ft. lbs. (2.5 - 2.8 kg-m) torque.

Observe this **WARNING** during next step

Do not touch the spark plug leads while engine is running as they will transmit a powerful electrical shock. Do not touch the hot exhaust system. A severe burn would result.

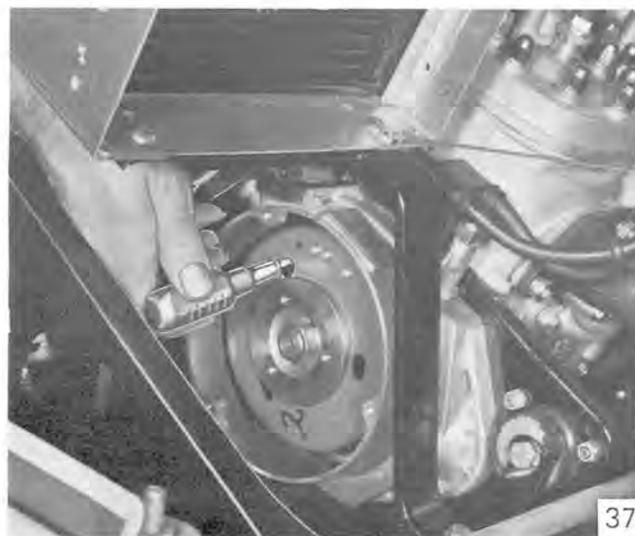
5. With the drive belt removed and the converter guard secured in place, run the engine at 6,500 R.P.M. Direct the timing light through the opening in the converter guard directly over the timing pointer. The timing is correct when the mark on the converter aligns with the pointer as the timing light flashes. (See Figure 36.)



36

If the timing is incorrect, proceed as follows:

1. Remove muffler and manual starter for access to stator plate; then loosen stator plate mounting screws through the holes in the flywheel. (See Figure 37.)



37

Observe this **CAUTION** during next step

When adjusting the stator plate, take care not to damage the coil windings.

- Turn the stator plate as required (clockwise to retard timing; counterclockwise to advance timing) to correct timing and tighten stator plate screws. Temporarily position muffler onto exhaust manifold, start engine using emergency starter rope, and recheck timing.
- When the ignition timing is correct, remove the timing light, replace the recoil starter and install muffler assembly.

NOTE: Make sure the lip on insulation washer is properly positioned in the slotted muffler bracket before tightening muffler mounting nuts.

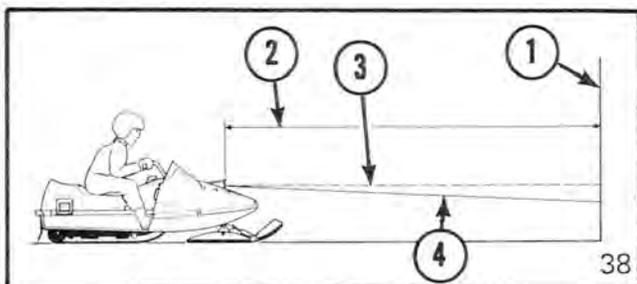
- Install drive belt and secure converter guard into proper position with clip pins.

CAUTION

Be certain the air silencer hose is directed to the rear after the converter guard is re-installed, as incorrect position may result in engine damage.

Headlight Adjustment

- Position the snowmobile on a level floor so the headlight points at a wall 25 feet (7,620 mm) away. The headlight must be in the up and locked position.
- Measure the distance from the floor to the center of the headlight and mark the wall at the dimension measured (reference mark). (See Figure 38.)



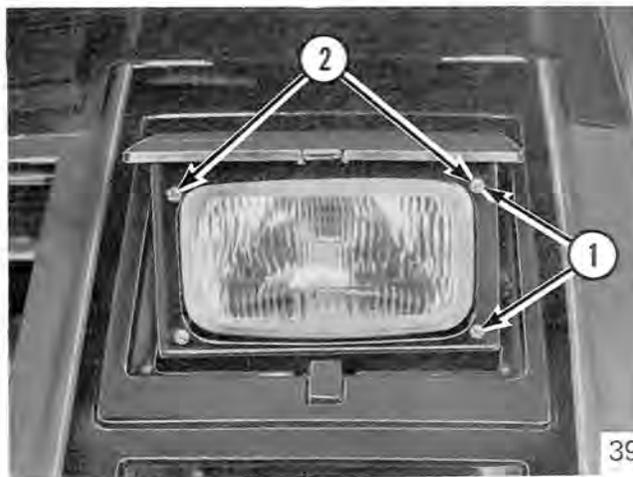
- Wall
- 25 Feet (7,620 mm)
- Reference Mark (center of headlight to floor)
- 2 Inches (51 mm) Below Reference Mark

Observe this **WARNING** during next step

If adjusting the headlight indoors, provide proper ventilation to prevent possible carbon monoxide poisoning.

NOTE: Be sure an operator is seated on the snowmobile while the engine is running to prevent the vehicle from creeping ahead, and to assure proper aiming.

- Turn on the headlight high beam. The headlight is properly aimed when the high beam is centered and aimed 2 inches (51 mm) below the reference mark on the wall. (See Figure 38.)
- If headlight adjustment is required, turn the adjusting screws as required. (See Figure 39.)



- Horizontal Adjusting Screws
- Vertical Adjusting Screws

Check the operation of the headlight low beam.

Tail/Brake Light Test

The taillight will operate only when the key switch is in the "Run/Lights" position.

The brake light is activated by a switch mounted in the brake lever housing on the handlebar. Brake light operation is independent of the other lights and the key switch.

Track Adjustments

WARNING

When raising the rear of the snowmobile off the ground, place the ski tips against a stationary object and be sure the vehicle is properly secured to prevent personal injury.

Track Tension

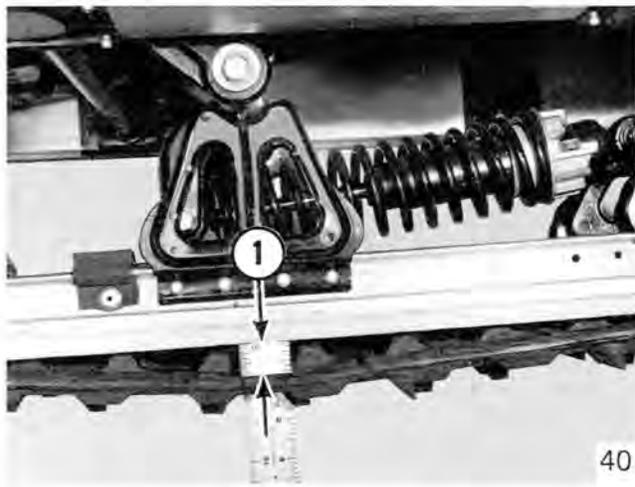
WARNING

To prevent personal injury, never adjust track tension with the engine running.

1. Raise the rear of the snowmobile so the track is off the ground for its entire length and secure the snowmobile so it cannot fall; then hang a 5 - 8 lb. (2.2 - 3.6 kg) weight from the mid point of the track.

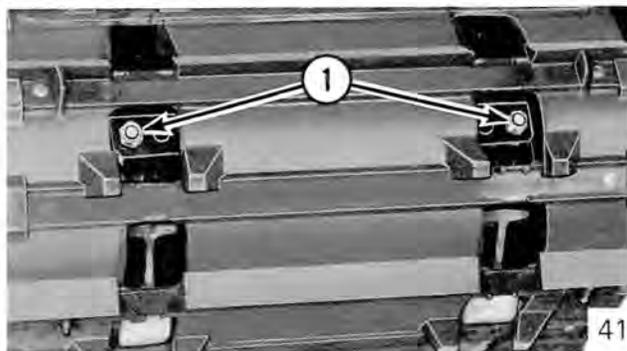
NOTE: Do not position the snowmobile on its side to adjust track tension as it would be impossible to get an accurate adjustment.

2. The clearance from the bottom of the wear strip to the top edge of the track should be 1-1/4 - 1-1/2 in. (31 - 38 mm) when measured directly below the rear suspension pivot arm bolt. (See Figure 40.)



1. 1-1/4 - 1-1/2 in. (31 - 38 mm)

3. Loosen the rear axle locking bolt on either side; then turn the rear axle adjusting nuts through rear track openings clockwise to decrease the clearance between the wear strip and track. (See Figures 41 and 42.)



1. Rear Axle Adjusting Nuts

4. When the proper tension is attained, be sure both adjusting nuts have the same number of exposed threads protruding through the nut. This is a good starting point for track alignment.
5. Remove weight from the track.

Observe this **WARNING** during next step

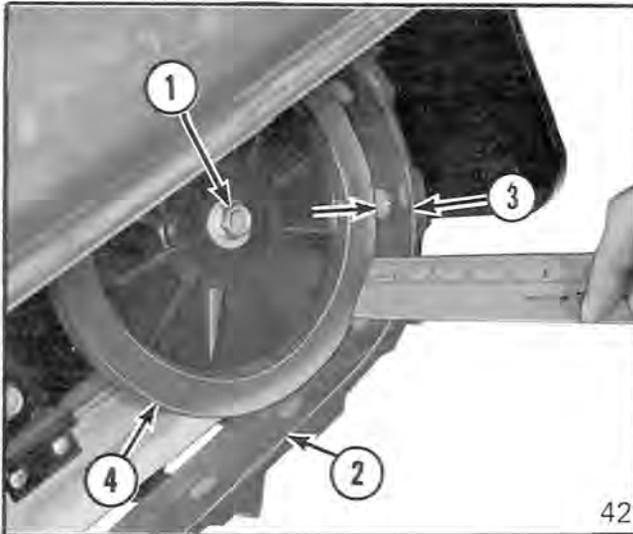
To avoid possible personal injury, do not stand behind snowmobile while track is rotating. Remove all tools and foreign matter from track area before starting engine.

6. Start the engine and push on the throttle lever only enough to turn the track slowly a few revolutions. Stop the engine and perform Track Alignment check.

NOTE: If ratcheting (slippage or jumping between the drive lugs on the track and the drive sprockets) occurs during hard acceleration or braking, tighten the track slightly.

Track Alignment

The track is aligned when the distance between the rear idler wheel and edge of the track is equal on both sides. (See Figure 42.)



1. Rear Axle Locking Bolts
2. Edge of Track
3. Dimension Equal on Both Sides
4. Idler Wheel

After performing Track Tension procedures, adjust track alignment as follows:

Observe this **WARNING** during next step

To prevent injury, never adjust or measure track alignment while the engine is running.

If the track runs to one side, tighten the rear axle adjusting nut on the same side, approximately 1/2 turn; then restart the engine and recheck the alignment.

CAUTION

If track alignment requires considerable adjustment, track tension should be rechecked to prevent damage to drive or suspension system.

When track alignment is correct, tighten the rear axle locking bolts.

NOTE: After the rear axle bolts have been tightened, check to be sure that the spacers (tubing) over the rear axle squeeze against the slide rail brackets, preventing the spacers from rotating. Loose spacers will permit the rear axle to float and proper track alignment cannot be maintained.

Test Ride (Operational Checks)

CAUTION

Improper engine warm-up could result in extensive engine damage.

Liquid cooled engines require proper warm up of coolant, to allow internal components (pistons and cylinders) to obtain proper clearances. Run engine a minimum of five (5) minutes before operating at sustained full throttle R.P.M.

Test ride the snowmobile and check for the following:

- **CONTROL CABLES**

The throttle and brake controls must operate without binding and return freely in any steering position.

- **STEERING**

Steering should be smooth and free from lock-to-lock with no excessive looseness in the steering linkage.

- **ENGINE**

Recoil starter works properly and the engine starts promptly. Test for good throttle response and return.

- **SUSPENSION**

Adjusted for average driver weight and operates smoothly.

- **EMERGENCY STOP SWITCH**

Check operation in all switch positions.

- **CONVERTERS**

Test for smooth operation and correct engine R.P.M., 7,800 - 8,000 at full throttle.

- **BRAKES**

When activated, the brakes should result in adequate smooth stopping of the track; when released, there should be no brake drag.

- **INSTRUMENTS**

Check for proper indications.

COOLANT TEMPERATURE

The engine coolant temperature can and will vary, depending upon air temperature, snow conditions and operating speeds. In marginal snow conditions, engine coolant temperatures will be higher than operation of the snowmobile in deep powder snow. Prolonged periods of idling or operating at slow speeds will cause coolant temperatures to be hotter than when the engine is operated at high speed.

Engine coolant temperature is "NORMAL" as long as the temperature gauge needle remains in the green area. The engine may continue to be operated when the temperature gauge needle is in the yellow, but use caution and monitor temperature needle indications frequently. Stop engine if needle moves into the red area of the temperature gauge and inspect cooling system for proper operation.

During the test ride, listen for any unusual noises (rattles, squeaks, etc.) that may warrant inspection and correction.

Upon completion of Test Ride, check the following:

1. Brake adjustment
2. Engine gearcase lubricant level
3. Cooling system coolant level
4. Retorque drive converter mounting bolt 65 - 70 ft. lbs. (9.0 - 10.0 kg-m)
5. Thoroughly inspect the engine compartment for fuel or oil leaks and repair as required.
6. Fastener check - Perform a general inspection to check fasteners for security. Use torque chart as a guide for tightening hardware when required.

Specifications

ENGINE

Type.....	(340) TC340A (440) TC440A
Displacement.....	(340) 20.7 C.I. (339.3 cc) (440) 26.6 C.I. (436 cc)
Bore X Stroke.....	(340) 2.362 x 2.362 inches (60 x 60 mm) (440) 2.677 x 2.362 inches (68 x 60 mm)
Number of Cylinders.....	2
Ignition System.....	Capacitor Discharge (C.D.)
Ignition Timing.....	0.108 inch B.T.D.C. (2.75 mm)
Spark Plug.....	NGK BR-9 EV
Spark Plug Gap.....	0.024 inch (0.6 mm)
Carburetor Make and Model.....	(340) Mikuni VM32 (440) Mikuni VM36
Engine R.P.M. at Full Throttle.....	7,800 - 8,000 R.P.M.
Engine Gearcase Capacity.....	1.35 oz. (40 cc)

CARBURETOR SETTINGS

Air Screw.....	1.5 turns off seat
Idle Screw.....	6 turns open from coil bound initial (3,000 R.P.M. final)

FUEL

Gasoline.....	Regular or Premium Leaded, minimum pump posted octane number 89
Oil.....	Kawasaki Snowmobile Oil or B.I.A. certified TC-W oil
Gasoline/Oil Ratio.....	Oil Injection

DRIVE SYSTEM

Drive Belt Width.....	1-1/4 inches (31.7 mm)
Drive Belt Outside Circumference.....	46-5/8 inches (1,184 mm)
Converter Offset.....	0.525 - 0.588 inches (13.3 - 14.9 mm)
Converter Center Distance.....	12 inches (304.8 mm)

ELECTRICAL SYSTEM

Type.....	12 Volts - 120 Watts
Headlight.....	Stanley 5988
Tail/Brake Light.....	G.E. No. 1157
Instrument Lights.....	G.E. No. 363

Torque Chart

DESCRIPTION	TORQUE	DESCRIPTION	TORQUE
CABLES & CONTROLS		ENGINE MOUNT & EXHAUST	
Brake & throttle lever - lock screw	20-25 in.lb. (0.2-0.3 kg-m)	Muffler mounting - nuts	60-70 in.lb. (0.7-0.8 kg-m)
Brake cable jam - nuts	50 in.lb. (0.6 kg-m)	Engine mount to chassis - nuts	31 ft.lb. (4.2 kg-m)
Enrichener cable assy - nuts	15-20 in.lb. (0.1-0.2 kg-m)		
Speedometer cable - nuts	Hand tighten	EXHAUST	
Throttle cable assy - nuts	15-20 in.lb. (0.1-0.2 kg-m)	Exhaust manifold - nuts	8-10 ft.lb. (1.1-1.3 kg-m)
CHAINCASE & JACKSHAFT		HOOD	
Chaincase mounting - nuts	18 ft.lb. (2.5 kg-m)	Hood hinge - nuts	25 in.lb. (0.2 kg-m)
Chaincase cover mounting - screws	70 in.lb. (0.8 kg-m)		
Jackshaft bearing retainer to chassis - rear bolt	31 ft.lb. (4.2 kg-m)	INSTRUMENT PANEL & INSTRUMENTS	
Jackshaft bearing retainer to chassis - front bolt	19 ft.lb. (2.6 kg-m)	Gauges to panel - nuts	11 in.lb. (0.1 kg-m)
Jackshaft bearing retainer adjusting bolt - jam nut	10-20 ft.lb. (1.3-2.7 kg-m)	Instrument panel - screws	32 in.lb. (0.3 kg-m)
Bearing locking collar - set screw	36 in.lb. (0.4 kg-m)	Temperature gauge sending unit - nut	20 ft.lb. (2.7 kg-m)
Bearing lock collar (locking torque)	36 in.lb. (0.4 kg-m)		
CHASSIS		RECOIL STARTER	
Hood guide and trim mounting - screws	20 in.lb. (0.2 kg-m)	Drive plate mounting - nut	8-10 ft.lb. (1.1-1.3 kg-m)
Hood guide, front bumper and hood hinge attaching - nut	70 in.lb. (0.8 kg-m)	Starter pulley mounting - bolts	16-18 ft.lb. (2.2-2.5 kg-m)
Passenger handle attaching - nuts	18 ft.lb. (2.5 kg-m)	Starter mounting - bolts	5-6 ft.lb. (0.6-0.8 kg-m)
Pan brace attaching - screws	70 in.lb. (0.8 kg-m)		
Trim attaching - screws	20 in.lb. (0.2 kg-m)	SKI & SPINDLE	
Seat attaching bolts	35 in.lb. (0.4 kg-m)	Ski skeg	18 ft.lb. (2.5 kg-m)
		Front spring mount - bolt	25 in.lb. (0.2 kg-m)
CHASSIS COOLANT SYSTEM		Shock absorber to ski and spindle - nuts	31 ft.lb. (4.2 kg-m)
Radiator assy to chaincase - bolt	70 in.lb. (0.8 kg-m)	Spindle to ski saddle - nut	46 ft.lb. (4.8 kg-m)
Radiator assy to chassis - bolts	18 ft.lb. (2.5 kg-m)	Rear spring mount - bolt	31 ft.lb. (4.3 kg-m)
DRIVE CONVERTER		STEERING	
Drive converter to crankshaft - bolt	65-70 ft.lb. (9.0-10 kg-m)	Handle holder - bolt	35 ft.lb. (4.8 kg-m)
Cover to movable sheave - bolt	8-10 ft.lb. (1.1-1.4 kg-m)	Steering arm to spindle - bolt	30 ft.lb. (4.1 kg-m)
Roller and pin assembly in movable sheave - bolt	8-10 ft.lb. (1.1-1.4 kg-m)	Steering column to tie rod - nut	30 ft.lb. (4.1 kg-m)
Weight ramp and pin assy to spider - bolt	6-8 ft.lb. (0.8-1.1 kg-m)	Steering arms to tie rods - nuts	30 ft.lb. (4.1 kg-m)
Weight ramp - nut	4-5 ft.lb. (0.5-0.7 kg-m)	Upper steering post mounting - nuts	18 ft.lb. (2.5 kg-m)
		Lower steering post mounting - nuts	20 ft.lb. (2.7 kg-m)
DRIVEN CONVERTER & BRAKE		Tie rod jam - nut (LH)	100-120 in.lb. (1.1-1.3 kg-m)
Driven converter to jackshaft - bolt	40-50 ft.lb. (5.5-6.9 kg-m)	Tie rod jam - nut (RH)	100-120 in.lb. (1.1-1.3 kg-m)
Coupling to fixed sheave - bolt	8-10 ft.lb. (1.1-1.4 kg-m)	RH tie rod to steering arm - nut	30 ft.lb. (4.1 kg-m)
Windage cover to sheave - screw	6.5-8 ft.lb. (0.9-1.1 kg-m)	Handlebar to holder clamp mounting - screws	105 in.lb. (1.2 kg-m)
Brake disc to hub mounting - screw	55-60 in.lb. (0.6-0.7 kg-m)		
Caliper to chaincase - nut	35 ft.lb. (4.8 kg-m)	SUSPENSION	
		Rear suspension arm - bolt	30 ft.lb. (4.1 kg-m)
ENGINE, GENERAL		Rear axle - bolts	25 ft.lb. (3.4 kg-m)
Cylinder head bolts	16 ft.lb. (2.2 kg-m)	Idler shaft - bolts	25 ft.lb. (3.4 kg-m)
Flywheel nut	60 ft.lb. (8.3 kg-m)	Shock absorber mounting - nuts	35 ft.lb. (4.8 kg-m)
Spark plug	20 ft.lb. (2.7 kg-m)	Suspension to chassis - bolts	25 ft.lb. (3.4 kg-m)
Holder (carb.) bolts	45 in.lb. (0.5 kg-m)	Swing arm - bolts	25 ft.lb. (3.4 kg-m)
Gear case bolts (socket head)	12 ft.lb. (1.6 kg-m)	Front pivot shaft - bolts	25 ft.lb. (3.4 kg-m)

