SNOWFIRE®
Snowmobile

Identification No. 222,001-)

JOHN DEERE

OPERATOR'S MANUAL

Snowmobile

Identification No. 222,001-)

JOHN DEERE

INTRODUCTION

Read this manual carefully to learn how to operate and service your snowmobile correctly.

SAFETY

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury, and carefully read the message that follows.

DIRECTIONS

"Right-hand" and "left-hand" sides are determined by facing in the direction of forward snowmobile travel.

MEASUREMENTS

This operator's manual contains SI metric equivalents which follow immediately after the U.S. customary units of measure.

IMPORTANT
The Snowfire snowmobile is not recommended for use at altitudes above 4000 feet (1219 m).

WARRANTY

Warranty is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual.

The warranty does not cover (a) John Deere snowmobiles used for competitive racing, altered for high performance or with high-performance kits; (b) products which have been altered or modified in ways not approved by John Deere, including setting fuel delivery above specifications or otherwise overpowering of products; (c) depreciation or damage caused by normal wear, accident, lack of reasonable and necessary maintenance as specified in this manual, improper maintenance, improper protection in storage, or improper use or abuse; (d) normal maintenance and replacement of service items such as filters, spark plugs, belts, brake linings, cutting blades and hoses unless such items are defective; (e) transportation, mailing and service call charges for warranty service.

MACHINE NUMBERS

Write the Product Identification Number and Engine Serial Number on the page provided in Specifications section. Your dealer needs this information when ordering parts.

Read this manual carefully to learn how to operate and service your snowmobile correctly.

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Assembly

UNPACK COMPONENTS

1. Skis.
2. Windshield.
3. Operator's Manual.
4. Bag of Parts.

ASSEMBLE COMPONENTS

Install Skis

1. Remove ski bolts, washers, lock nuts, cotter pins and rubber ski spring stops from bag of parts.
2. Tip snowmobile on its side and insert bushing into spindle. Use Never-Seez on bushing.
3. Install rubber ski spring stop over spindle.
4. Position ski over stop.
5. Use two drift punches as shown to align ski with hole. Remove top drift punch first and install ski bolt.
6. Install washer and nut. Tighten nut to 39 lb-ft (52 N·m). Install cotter pin.

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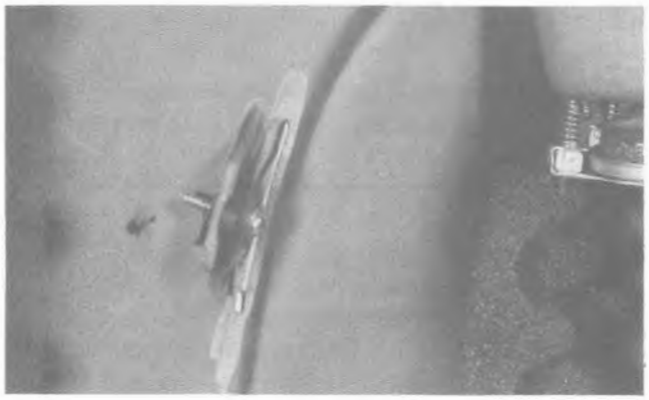
UNPACK COMPONENTS

1. Skis.
2. Windshield.



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Install Windshield

1. Remove washers, pan head screws, speed nuts, and rubber spacers from bag of parts.
2. Install windshield using screws, washers, and speed nuts. Position each rubber spacer between windshield and tab as shown.
3. Attach hood lanyard cable to screw (A).

M33138

1. Remove washers, pan head screws, speed nuts, and rubber spacers from bag of parts.
2. Install windshield using screws, washers, and speed nuts. Position each rubber spacer between windshield and tab as shown.
3. Attach hood lanyard cable to screw (A).

PREDELIVERY CHECK LIST

CAUTION: When starting snowmobile, support machine so track is clear of ground. Check throttle for proper operation.

1. Align skis and check steering linkage.
2. Check track tension and align.
3. Check brakes. Adjust if necessary.
4. Check operation of choke and throttle. Adjust if necessary.
5. Start engine and check idle speed.
6. Check emergency stop and key switch.
7. Check operation of all lights.
8. Aim and adjust headlight.
9. Check speed limiter system.
10. Test drive or dynamometer test snowmobile. (DO NOT EXCEED BREAK-IN SPEED.)
11. Install accessories desired by customer.

DELIVERY CHECK LIST

1. Explain operator's manual to customer.
2. Instruct customer about snowmobile operation.

NOTE: BREAK-IN PERIOD:
Do not exceed 30 mph (48 km/h) for the first 25 miles (40 km), or force the machine at full throttle in deep snow. An occasional short burst of power on hard-packed snow will not be harmful. Operating snowmobile above 40°F (5°C) may result in hard starting or reduced performance.

3. Explain fuel-oil mixture. Use regular leaded or unleaded gasoline with an anti-knock index of 87 or higher. Use a 40:1 ratio for first tank of fuel and a 50:1 ratio thereafter.

NOTE: Regular (leaded) gasoline is preferred but unleaded gasoline is acceptable. DO NOT USE GASOHOL.

4. Tell customer about 10-hour or 200-mile (322 km) check up

1. Align skis and check steering linkage.
2. Check track tension and align.
3. Check brakes. Adjust if necessary.
4. Check operation of choke and throttle. Adjust if necessary.
5. Start engine and check idle speed.

PERFORM THESE 10 HOUR OR 200 MILE (322 km) CHECKS

The following inspection must be performed on your new John Deere snowmobile. This should be done at approximately the first 10 hours or 200 miles (322 km) of operation. It will help assure you of top performance and avoid premature failure of critical components. Your John Deere dealer is qualified to perform this inspection.

Contact your dealer to arrange for an appointment. You are obligated to deliver the snowmobile to the dealer. Any normal maintenance or repair work required, not covered by warranty, will be charged to you should you decide to have the work done.

The inspection check list is as follows:

OKAY	NEEDS REPAIR	
_____	_____	1. Track tension.
_____	_____	2. Drive belt, drive, and driven sheaves.
_____	_____	3. Carburetor adjustment.
_____	_____	4. Carburetor mounting hardware.
_____	_____	5. Operation and adjustment of brake, throttle, and choke lever controls.
_____	_____	6. Condition of ski wear rods.
_____	_____	7. Suspension hardware.
_____	_____	8. Suspension slide wear bars.
_____	_____	9. Ski alignment.
_____	_____	10. Operation of headlight, stop-taillight, dimmer switch, and emergency stop switch.
_____	_____	11. Engine head bolts and exhaust manifold nuts.
_____	_____	12. Steering component hardware (steering arms, tie rods and handlebars).

DEALER COMMENTS:_____

Dealer Name_____

Town_____

Date_____

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The inspection check list is as follows:

NEEDS

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Safety

CAUTION: Improper use or maintenance by the operator can result in injury. Follow these safety suggestions.

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Preparation

Before starting the engine, read your operator's manual from cover to cover. Knowledge can prevent accidents.

Always operate your throttle and brake controls several times before you start your engine. Stuck or frozen controls could cause serious injury or damage.

Know your controls. Learn how to stop in an emergency.

Know your state, provincial, federal and local laws pertaining to snowmobiling. Respect property of others. Don't spoil this fine winter sport by creating a bad image.

Never add fuel when smoking or while engine is running. Use a safe gasoline container. Always use fresh, clean fuel of the proper mixture. See page 6.

Wear clothing designed for snowmobiling. . . avoid frostbite. Never wear scarves, loose belts, or clothes that could catch on moving parts or tree limbs.

Always wear eye and headgear protection to guard against injury.

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear earplugs or any suitable hearing protective device that is comfortable when wearing a snowmobile helmet to protect against objectionable or uncomfortable loud noises. Always wear an approved helmet to guard against head injury.

Avoid sun blindness. Wear properly tinted goggles or face shields. Never wear yellow eye protection in the bright sun.

Do not allow anyone to operate snowmobile without proper instructions. Take proper precautions before

Safety

CAUTION: Improper use or maintenance by the operator can result in injury. Follow these safety suggestions.

Always carry emergency survival supplies when going on long trips. Let friends and relatives know your destination and expected arrival time.

Operation

Give complete and undivided attention to your snowmobile. . .don't be a show-off.

Do not operate snowmobile in crowded areas or steer the machine toward persons.

Do not operate snowmobile too close to avalanche areas, or on other unsafe terrain where spills could occur.

Observe all state, provincial, federal and local regulations, especially those with regard to operating on streets and highways.

When crossing highways (where permitted by law) *always stop,* look both directions, and cross at a 90-degree angle. Post guards when crossing in groups.

Do not operate snowmobiles on or near railroad tracks. Trains cannot always be heard above sound of snowmobile engine. . .it is difficult to escape from between tracks.

Skiers and snowmobiles don't mix on the same hillsides. Avoid ski slopes.

Never operate snowmobile on rivers or lakes without first checking thickness of ice. If you go through the ice, don't panic. Conserve energy.

Never operate snowmobile at night without lights. Keep headlight and taillight areas free of snow.

Keep all shields in place. . .all guards and protective hoods.

Never open new trails at night. Follow established trails. Unseen barbed wire or guy wires can cause serious injury or death.

Always use both hands for steering.

Avoid operating snowmobile at excessive speed. Always be aware of terrain.

If throttle sticks, don't panic. Turn emergency stop switch on the right-hand handlebar. See page 8.

Always allow adequate stopping distance based on ground cover conditions. Remember, ice requires a greater stopping distance. To avoid skidding, don't apply brakes rapidly on ice.

Ice or hard surfaces do not provide the same stability

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Operation

Give complete and undivided attention to your snowmobile. . .don't be a show-off.

Do not operate snowmobile in crowded areas or steer the machine toward persons.

Do not operate snowmobile too close to avalanche areas, or on other unsafe terrain where spills could occur.

Be sure tool box lid is closed at all times. An open lid could cause interference with steering or possible contact with the throttle lever producing unexpected acceleration.

Do not speed through wooded areas. Hidden obstructions, hanging limbs, unseen ditches, and even wild animals can cause accidents.

Do not tailgate when riding trails. Rear end collisions can cause injury and machine damage.

Don't mix alcoholic beverages with snowmobiling.

Keep feet on footrests at all times. Do not permit them to hang over sides. Do not attempt to stabilize machine with feet when making turns or in near-spill situations. Broken limbs could result.

Select a riding position suited to the terrain upon which you're operating. Do not stand on seat, stunt, or show-off.

Do not jump snowmobile. Operator injury or machine damage could result.

Keep hands and feet out of the track area . . . be especially careful when freeing your snowmobile from deep snow.

When towing a sled, use a solid towbar. Do not use ropes or other flexible tow straps. See page 9.

Observe fuel supply regularly. Do not travel farther than your fuel will permit you to return.

Remove key from switch whenever you leave your machine unattended.

Never drive your snowmobile onto a tilt-bed trailer. Winch it on.

Always secure snowmobile firmly to trailer. Be sure trailer lights are operative.

Maintenance and Storage

Check over your snowmobile regularly. This will prevent many problems from occurring.

Do not attempt to make repairs to your snowmobile while engine is running.

Keep matches away and do not smoke while filling the fuel tank. Avoid possible explosions.

Check skis and steering components frequently to see they are in good condition. Keep all hardware tight.

Never lift the rear of the snowmobile to clear the track.

contact with the throttle lever producing unexpected acceleration.

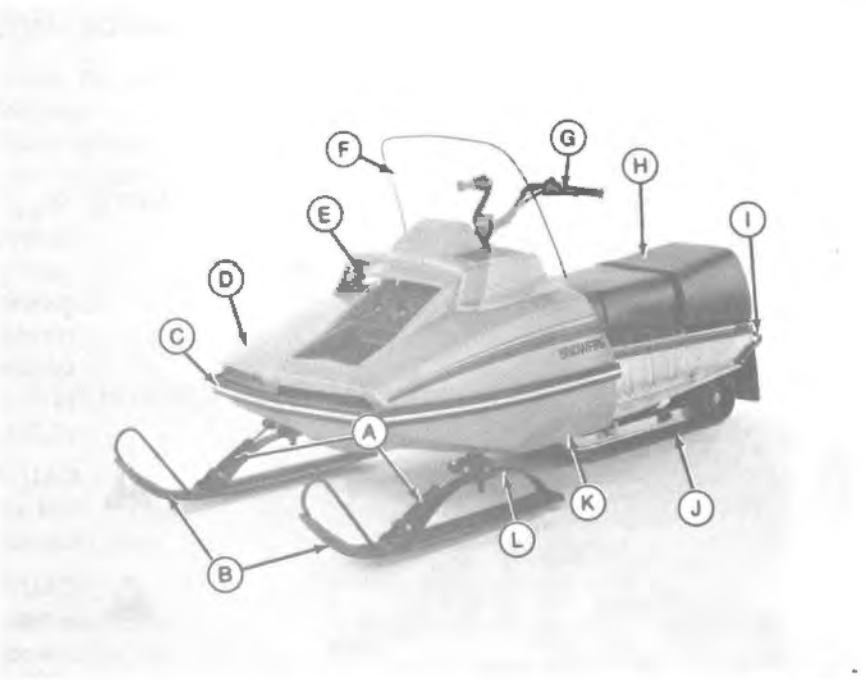
Do not speed through wooded areas. Hidden obstructions, hanging limbs, unseen ditches, and even wild animals can cause accidents.

Do not tailgate when riding trails. Rear end collisions can cause injury and machine damage.

Don't mix alcoholic beverages with snowmobiling.

Identification

A—Shock Absorbers
B—Skis
C—Front Bumper
D—Hood
E—Headlight
F—Windshield
G—Brake Control
H—Seat
I—Rear Bumper
J—Track
K—Pan
L—Ski Spring



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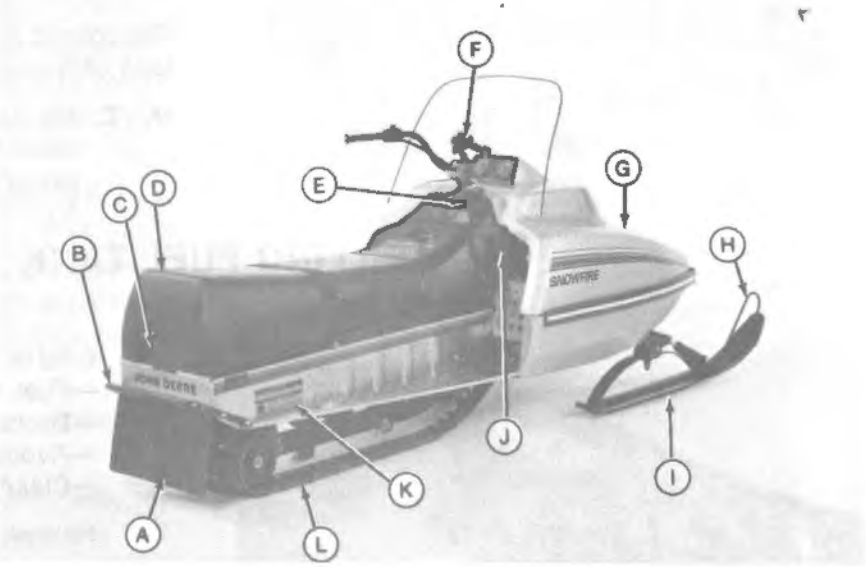
A—Snow Flap
B—Rear Bumper
C—Stop-Taillight
D—Seat
E—Fuel Tank
F—Throttle Control
G—Hood
H—Ski Handle
I—Ski
J—Recoil Start
K—Product Identification Number



Preparation

MIXING FUEL

IMPORTANT: Use regular leaded or unleaded gasoline with anti-knock index of 87 or higher, mixed with 2-cycle oil in the proper ratio. Never use gasoline that has been stored for a long time.

NOTE: Regular leaded gasoline is preferred but unleaded gasoline is acceptable. DO NOT use gasoline-alcohol mixtures, such as gasohol, or ethynol-blend gasoline. When running snowmobile in powder snow or blowing snow conditions add gasoline de-icer to the fuel tank. Use ONLY 8 ounces (0.24L) per tank of fuel.

CAUTION: Excessive amounts of de-icer will lean out the fuel mixture and could cause engine damage.

CAUTION: Use safe mixing procedures.
—Use an approved container for storage and refueling.
—Mix fuel outdoors.
—Do not smoke.
—Do not spill fuel.

Use John Deere 2-cycle oil or an equivalent BIA approved 2-cycle oil. Mixing is improved if the oil is at room temperature.

The correct fuel-oil mixture is 40:1 ratio for the first tank of fuel and 50:1 ratio thereafter. See page 29.

NOTE: Mix gasoline and oil in a separate container - never mix in the snowmobile fuel tank. Agitate stored mixtures thoroughly before using.

FILLING FUEL TANK

CAUTION: Use safe refueling procedures.
—Fuel snowmobile outdoors.
—Do not smoke.
—Avoid spilling fuel. Do not overflow.
—Clean fuel tank of any spilled fuel.

MIXING FUEL

IMPORTANT: Use regular leaded or unleaded gasoline with anti-knock index of 87 or higher, mixed with 2-cycle oil in

Operation

BEFORE OPERATING

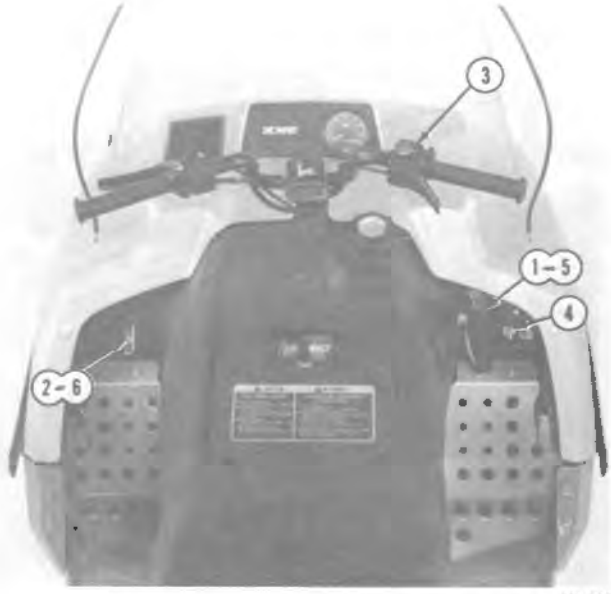
1. Wipe windshield with a clean damp cloth. Do not use gasoline, solvents or abrasive cleaners.
2. Check skis, wear rods, and all steering components. Check steering for a full right and left-hand turn.
3. Check track for proper tension.
4. Check fuel level.
5. Check throttle and brake for proper operation.

STARTING ENGINE

Engine Break-In

Do not exceed 30 mph (48 km/h) for the first 25 miles (40 km), or force the machine at full throttle in deep snow.

CAUTION: Be sure area in front of machine is clear. Be prepared to apply brake to prevent snowmobile movement.



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1. With no choke and no throttle, pull recoil start handle to turn engine over two or three times.
2. Flip choke lever straight up (normal position) in extremely cold weather, flip choke over center all the way (richer position).
3. Emergency stop switch must be in ON position.
4. Insert key and turn key switch "ON." DO NOT open throttle lever.
5. Pull recoil start rope.
6. When engine starts, allow it to run briefly before closing choke.

If engine becomes "flooded," close the choke. Hold the throttle in wide open position. Pull start rope until engine "pops." Release throttle. Pull recoil start rope until engine starts.

NOTE: Remove and dry plugs if engine is extremely flooded.

IMPORTANT: DO NOT permit engine to idle for long intervals. Shut engine off

BEFORE OPERATING

1. Wipe windshield with a clean damp cloth. Do not use gasoline, solvents or abrasive cleaners.
2. Check skis, wear rods, and all steering compo-
nents. Check steering for a full right and left-hand

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Emergency Starting

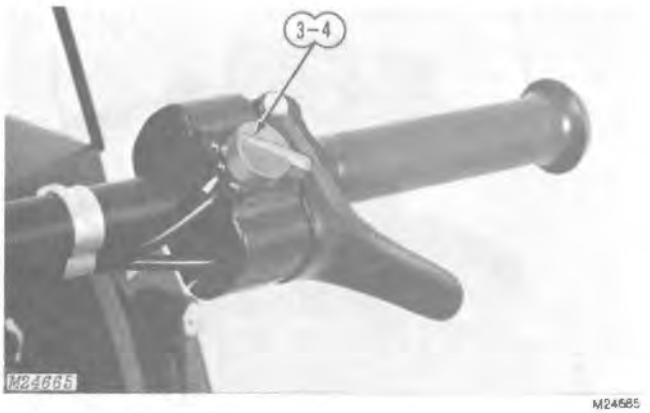
1. Raise hood and use tool kit provided with snowmobile to remove recoil starter.
2. Push secondary clutch in slightly and to relieve belt tension. This allows for easier starting.
3. Wind rope clockwise around starter cup with knot in rope in one of notches of cup.

   CAUTION: Do not wind rope around your hand. Use "T" handle from tool kit. When starting engine, use a sharp, crisp pull on rope so rope comes free of starter cup.

4. Keep all people clear of snowomobile when starting engine with emergency start procedure.

   CAUTION: Knotted end of rope comes free of starter cup when rope is pulled. Knotted end could snap into a bystanders face and cause personal injury.

STOPPING ENGINE



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1. Release throttle lever.
2. Apply brake.
3. Turn emergency stop switch up or down.
4. Before restarting, stop switch must be turned to the center position. Always check stop switch before attempting to start engine.
5. Turn key switch "OFF". Remove key when leaving machine unattended.

LIGHTS

NOTE: The lights are automatically "ON" whenever the engine is running.

1. Stoplight comes on when brake is applied.
2. Push dimmer switch rearward for low beam.
3. Push dimmer switch forward for high beam.

NOTE: If one filament of bulb fails, the other beam can still be used. See page 22 for adjusting headlight and changing bulbs.

2. Push secondary clutch in slightly and to relieve belt tension. This allows for easier starting.
3. Wind rope clockwise around starter cup with knot in rope in one of notches of cup.

   CAUTION: Do not wind rope around your hand. Use "T" handle from tool kit. When starting engine, use a sharp, crisp pull on

CLEARING TRACK

1. Clear track after operating in slushy snow.
2. Tip machine on its side until track clears the ground.
3. Spin track at moderate speed until snow and ice are thrown clear

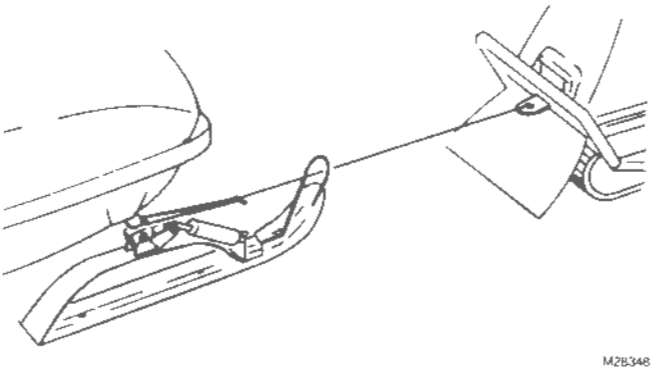
CAUTION: Be sure no one is behind machine when clearing track. Injury could result from ice or rocks thrown from track.

IMPORTANT: If track freezes, free the track manually. Do not use the engine to break track loose because it will burn and damage the drive belt.

TOWING

CAUTION: Always use a solid tow bar when possible. Flexible ropes or pull straps do not allow for control on turns or when stopping.

1. Remove drive belt
2. Connect only one ski of disabled machine to the tow machine
3. DO NOT use rear bumper for towing.
4. When towing with a rope or strap run rope through ski handle and around spindle. Do not loop rope or strap through both skis as this may damage the steering tie rod



DRESSING FOR THE WEATHER

1. To be safe from frostbite, dress for the wind and weather
2. Wear protective clothing and accessories.
3. The chart provides a guide and illustrates the danger zones

CAUTION: Always wear a snowmobile helmet with face shield or goggles. The helmet provides both warmth and protection against head injury.

2. Tip machine on its side until track clears the ground.
3. Spin track at moderate speed until snow and ice are thrown clear

CAUTION: Be sure no one is behind machine when clearing track. Injury could result from ice or rocks thrown from track.

IMPORTANT: If track freezes, free the track manually. Do not use the engine to break

WIND CHILL CHART

ESTIMATED WIND SPEED IN MPH	ACTUAL THERMOMETER READING (°F.)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	EQUIVALENT TEMPERATURE (°F.)											
calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER (for properly clothed person)				INCREASING DANGER			GREAT DANGER				
					Danger from freezing of exposed flesh							

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TRANSPORTING

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When transporting snowmobile on a trailer, close the fuel shut-off valve to prevent flooding of the engine.

ESTIMATED WIND SPEED IN MPH	ACTUAL THERMOMETER READING (°F.)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	EQUIVALENT TEMPERATURE (°F.)											
calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112

Service

SERVICE INTERVAL CHART

Item	As Needed	Daily	Every 150 Miles	Every 300 Miles	Annually	Page
Clean Windshield	X					7
Check Condition of Skis and Steering		X				20, 21
Check Track Condition and Tension		X				19
Check Throttle Control Operation		X				13
Check Operation of Brakes		X				18
Check Emergency Stop and Key Switches		X				8
Check Lighting System		X				22
Check In-Line Fuel Filter		X			X	16
Check Drive Belt Condition		X				17
Check Carburetor Adjustments			X	X	X	13, 14, 15
Check Choke Adjustments			X	X	X	13
Check Ski Alignment	X				X	21
Check Headlight Adjustment	X				X	22
Check Ski Wear Rods and Wear Plates	X				X	20, 21
Check Slide Suspension Wear Bars				X	X	19
Use Never-Seez on Throttle Cable End					X	13
Check All Components for Condition and Tightness					X	24
Check Drive and Driven Sheaves					X	17
Store Snowmobile Properly					X	25

SPARK PLUGS

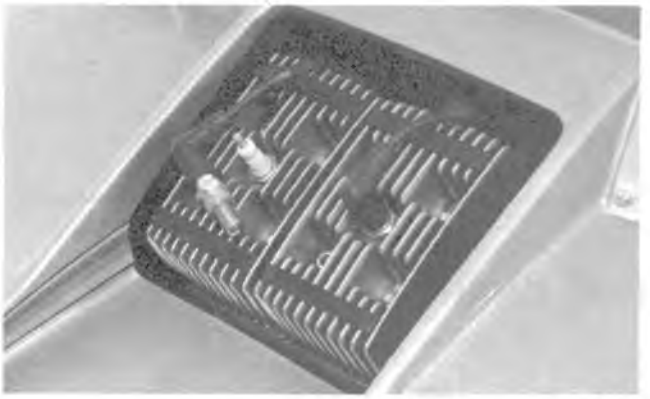
NOTE: Spark plugs are Champion ON-3 (John Deere Part No. AM55045).

Removing Spark Plugs

CAUTION: High-energy ignition systems can produce injurious electrical shock. Stop engine and remove key before working on ignition.

SERVICE INTERVAL CHART

	As		Every 150	Every 300		



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Checking Spark Plug

CAUTION: Do not hold the plug or plug wire in your hand when checking for spark. High-energy ignition systems can produce injurious electrical shock. DO NOT remove plugs from engine for this test. If crankcase is full of fuel and engine is turned over, gasoline may spew out spark plug hole, causing a fire hazard.

1. Reconnect spark plug wire to a new spare plug.
2. Lay plug on engine fins.
3. Pull the recoil start rope and check for spark.

New plugs are gapped at 0.025 inch (0.635 mm). The gap will widen in proportion to the hours and miles of use. When plug gap reaches 0.045 inch (1.143 mm) or if plug malfunctions, replace it.

IMPORTANT: Do not regap the plug, always replace it!

Plug Appearance	Possible Cause
Tan or Cocoa Brown	Proper fuel mixture, good combustion.
Black or Sooty	Fuel mixture too rich, poor combustion.
White or Light Tan	Fuel mixture too lean, hot combustion.

NOTE: Replace plug if appearance is abnormal, engine starts hard or malfunctions.

Installing Spark Plug

1. Clean plug seating surface on cylinder head.
2. Install plugs and torque to 20 ft-lbs (27 N·m).
3. Install spark plug wires.

NOTE: See page 30 for spark plug recommendations.

CARBURETOR

IMPORTANT: OO NOT run engine when adjusting carburetor.

The carburetor is a float-type, fixed main jet carburetor. The float in the fuel bowl maintains a constant fuel level in the bowl. The fixed main jet eliminates high-speed adjustments. Altitude and temperature variations may require carburetor changes and adjustments.

in your hand when checking for spark. High-energy ignition systems can produce injurious electrical shock. DO NOT remove plugs from engine for this test. If crankcase is full of fuel and engine is turned over, gasoline may spew out spark plug hole, causing a fire hazard.

1. Reconnect spark plug wire to a new spare plug.
2. Lay plug on engine fins.

Adjusting Choke Plunger

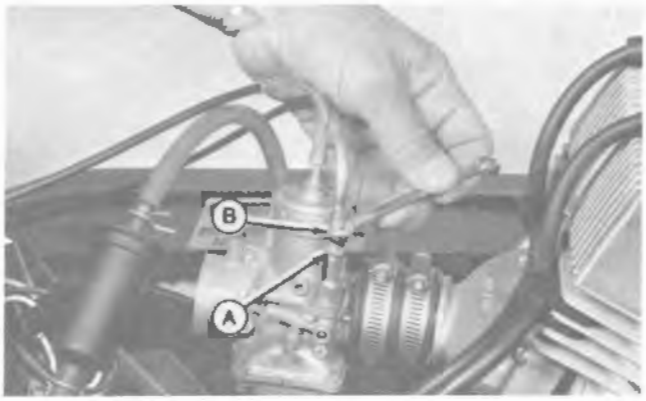
1. Remove air intake silencer.
2. Place choke lever down (closed).
3. Look in the choke plunger hole in the carburetor throat. Plunger should be all the way down in the bore.

NOTE: There should be slight freeplay between choke lever and dash when plunger is all the way down.

4. To adjust plunger, loosen jam nut (A), turn adjusting sleeve (B) clockwise. This moves plunger down. Tighten jam nut.

IMPORTANT: Plunger must be down tight in the bore or the carburetor will run "rich." This will cause a problem on midrange or top engine performance.

5. Raise choke lever and look in choke plunger hole. Plunger should raise enough to expose at least half the hole opening.



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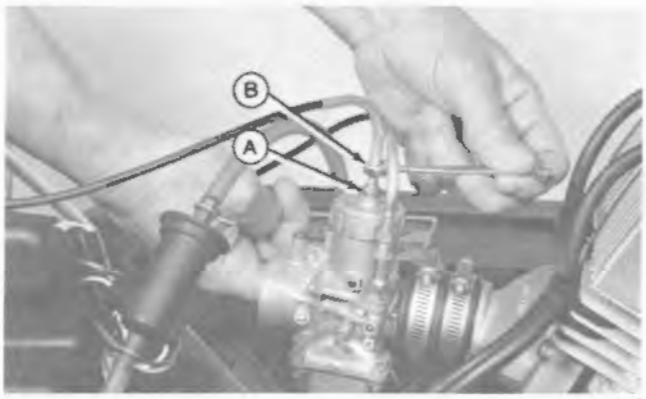
Adjusting Throttle Cable

1. Remove air intake silencer.
2. Lock throttle lever against handgrip with a clamp or strong rubber band.
3. Place your finger in throat of carburetor so you can feel the backside of the throttle valve.
4. Loosen jam nut (A) and turn adjusting sleeve (B) until the backside of throttle valve is flush with the bore. Tighten jam nut.

NOTE: No part of the throttle valve should restrict air flow through the carburetor throat when throttle is in the wide open position.

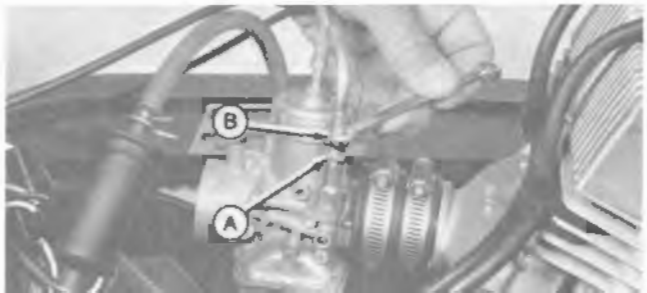


M30835

3. Look in the choke plunger hole in the carburetor throat. Plunger should be all the way down in the bore.

NOTE: There should be slight freeplay between choke lever and dash when plunger is all the way down.

4. To adjust plunger, loosen jam nut (A), turn adjusting sleeve (B) clockwise. This moves plunger



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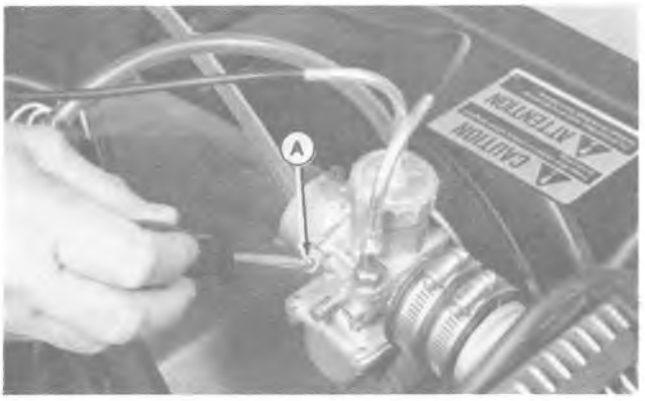


M30837

M30838

5. Turn idle adjusting screw counterclockwise until the tip is flush with inside of bore.
6. Remove clamp or rubber band from throttle lever. This allows throttle valve to fully seat in bore.
7. Turn idle adjusting screw clockwise until screw contacts throttle valve. Turn screw two additional turns clockwise. This gives preliminary idle speed.
8. Look into throat of carburetor and slowly compress throttle lever. The throttle valve should begin to rise; if not, repeat Steps 2, 3, and 4.
9. Turn pilot air screw (A) in until slight seating resistance is felt.
10. Back the air screw (A) out 1 turn.
11. Install air intake silencer and run engine until operating temperature is reached. If idle speed is not correct, turn idle adjusting screw (B) in or out until idle speed is correct (2000-2100 rpm).

IMPORTANT: **DO NOT use the air screw (A) at any time to set engine idle. Air screw should be adjusted as explained in Step 10.**

Replacing Carburetor Main Jet

1. Remove throttle valve assembly from top of carburetor.
2. Loosen clamp securing carburetor to intake manifold.
3. Loosen clamp securing intake silencer boot to carburetor.
4. Turn carburetor 90 degrees.

CAUTION: Fuel in carburetor float bowl drains out when hex. plug is removed. Place sufficient material under carburetor to soak up spilled fuel, when plug is removed. Avoid fires due to smoking or careless maintenance practices.

5. Use a 17 mm wrench to remove hex. plug from bottom of carburetor.
6. Remove clamp or rubber band from throttle lever. This allows throttle valve to fully seat in bore.
7. Turn idle adjusting screw clockwise until screw contacts throttle valve. Turn screw two additional turns clockwise. This gives preliminary idle speed.
8. Look into throat of carburetor and slowly com-

CARBURETION RECOMMENDATIONS

Temperature	Component	See Level to 4000 feet (1219 m)
Below 0°F (– 18°C)	Main Jet	170
Above 0°F (– 18°C)	Main Jet	160
All Temperatures	Jet Needle	5DP7-3
	Needle Jet	(169) P-2
	Throttle Valve	2.5
	Pilot Jet	30
	Air Screw	1 Turn Open
	Idle Speed	2000 - 2100 rpm

SPEED LIMITER SYSTEM

The function of the speed limiter system can be checked by holding the throttle lever pin rearward and pressing the throttle lever slowly. If the system is functioning correctly, the engine will "miss" or "cut out" at 2800 to 3000 rpm.

The speed limiter system provides two types of protection; it limits engine speed to 2800 to 3000 rpm if the throttle lever is released and the carburetor slides stick open and it limits maximum engine speed to 6700 to 7300 rpm in the event of a broken belt at wide open throttle.

M30839

Temperature	Component	4000 feet (1219 m)
Below 0°F (– 18°C)	Main Jet	170
Above 0°F (– 18°C)	Main Jet	160
All Temperatures	Jet Needle	5DP7-3

IN-LINE FUEL FILTER

M30842

Change the filter annually.

AIR INTAKE SILENCER

M30843

The first indication of trash in the silencer will be loss of power and performance. The engine will run "rich" because adequate air will not be mixing with the fuel.

1. Remove silencer.
2. Shake or blow out silencer to remove any trash.
3. Install silencer screen.

IMPORTANT: DO NOT run engine with air intake silencer removed.

DRIVE SYSTEM

Replacing Drive Belt

The drive belt should be replaced if its width is reduced by 1/8 inch (3.18 mm). A narrow belt reduces snowmobile top speed. Correct width is 1-1/4 inches (31.75 mm).

If drive belt wears rapidly, drive and driven sheaves may be out of alignment. See your John Deere dealer. A belt worn narrow in one area is caused by trying to free a frozen track with the engine. Free a frozen track manually before starting engine.

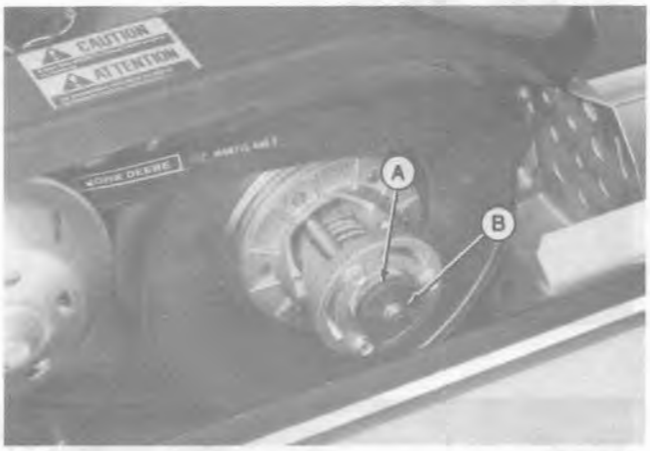
CAUTION: Keep fingers out of area between driven sheave halves. If driven sheave sticks, use care in opening it to prevent hand from being pinched.

1. Push in on center of driven sheave and lift belt up and over sheave half.
2. Remove belt from drive sheave.

IMPORTANT: Never pry belt over sheaves.

3. Install belt in reverse sequence. Always install belt so that number on belt can be read when viewed from the left-hand side of the snowmobile.

NOTE: As belt wear increases or if belt stretches, remove "anti-creep" shims (A) from behind retaining washer (B). When new belt is installed, replace shims. Torque cap screw to 20 ft-lbs (27 N·m). After installing a new belt, if snowmobile has a tendency to creep at idle speed, add a shim.



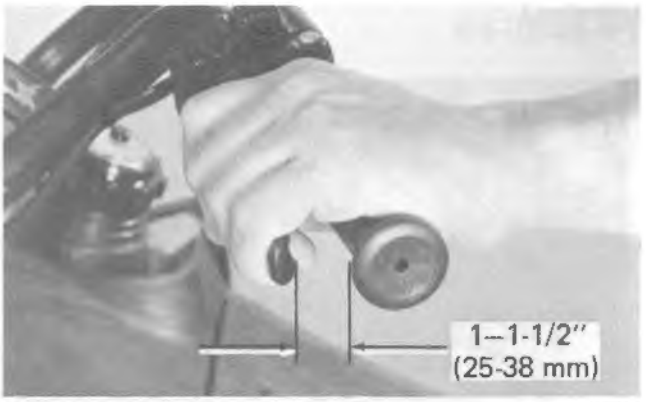
M29153

A—"Anti-Creep" Shims B—Retaining Washer

by 1/8 inch (3.18 mm). A narrow belt reduces snowmobile top speed. Correct width is 1-1/4 inches (31.75 mm).

If drive belt wears rapidly, drive and driven sheaves may be out of alignment. See your John Deere dealer. A belt worn narrow in one area is caused by trying to free a frozen track with the engine. Free a frozen track manually before starting engine.

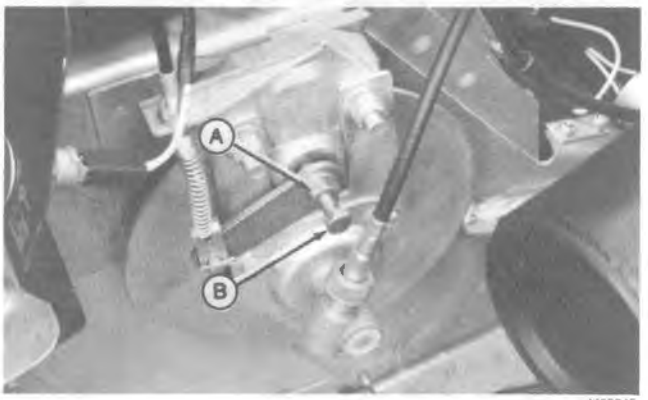
CAUTION: Keep fingers out of area be-



M30912

Adjusting Brake

1. Apply the brake control lever and measure the distance from the lever to the handgrip. It should be 1 to 1-1/2 inches (25 to 38 mm).



M30845

2. Adjust brake by loosening jam nut (A) and tightening adjusting screw (B). Tighten jam nut.

CAUTION: DO NOT adjust jam nuts on brake cable.

3. Check brake tension.
4. Readjust if necessary.

NOTE: Be certain dowel on end of brake cable is seated properly in recess of brake control lever.

5. After brake adjustment, check operation of stoplight switch. If stoplight does not work, check for a defective switch.

SLIDE SUSPENSION

The slide suspension system requires lubrication between the plastic wear bar and the track grouser bar. The absence of lubrication (snow or water) causes the plastic wear bar to wear rapidly and in severe cases, literally melt away.

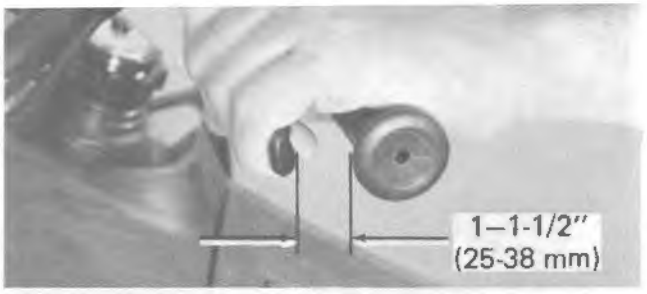
Operation of the snowmobile under the following conditions should be avoided.

1. Dirt
2. Rocks
3. Sand
4. Grass
5. Bare Pavement
6. Snow permeated with dirt and sand
7. Glare ice surfaces

IMPORTANT: When running on ice or hard packed snow at high-speed, the wear bars will heat up. Either reduce speed, or

distance ... frequently stop and gently lose ex

1 to 1-1/2 inches (25 to 38 mm).



Replacing Wear Bars

When running in marginal snow conditions, check wear bars daily.

1. Tip snowmobile on its side.
2. Check wear bars in several places for cracks, thin areas and sand or gravel imbedded in the bar.

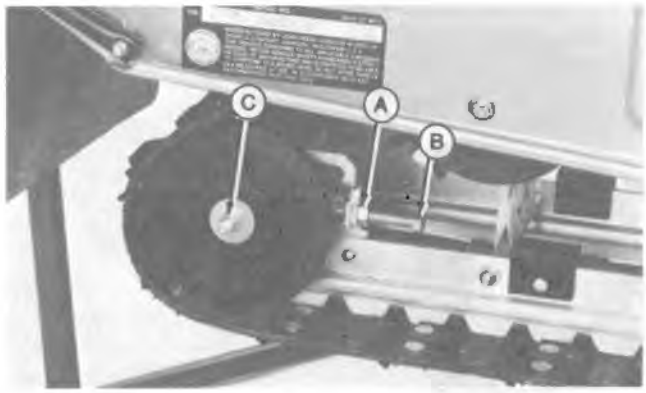
NOTE: Sand or gravel imbedded in the wear bars acts as an abrasive and will destroy the steel grouser bars in the track.

3. If any of these conditions exist, see your John Deere dealer for wear bar replacement.

Adjusting Track Tension

Check track tension and alignment frequently. A loose track causes excessive slap and could damage the track, tunnel or slide assembly. A tight track requires additional power to operate.

1. Suspend or support snowmobile so track is clear of ground.
2. Loosen rear idler wheels through bolt (C).
3. Loosen jam nuts (A) on track adjusting screws (B).
4. Turn adjusting screws (B) to tension track.
5. Measure below the lower shock absorber mount for clearance of flush to 1/4 inch (6.35 mm) between track and slide wear bar. Both sides should be equal. Tighten jam nuts.
6. Tighten rear idler wheels through bolt to 25 ft-lbs (34 N·m).



M30914

A—Jam Nut **B—Adjusting Screw** **C—Through Bolt**

After Adjustment

1. Start engine and allow the track to rotate slowly several times. Shut off engine and allow track to coast to a stop. DO NOT APPLY BRAKE TO STOP THE TRACK.

CAUTION: Do not stand behind snowmobile when track is running.

2. Check alignment. Rear idler wheels should run in center of drive lugs.
3. Slide rail wear bar should be in middle of each slide rail opening of track.
4. If either Step 2 or 3 indicates a need for adjustment, repeat the procedure.

NOTE: Track will run to the loose side. If track is too far to the left, tighten the left adjusting screw to move the track to the right.

2. Check wear bars in several places for cracks, thin areas and sand or gravel imbedded in the bar.

NOTE: Sand or gravel imbedded in the wear bars acts as an abrasive and will destroy the steel grouser bars in the track.

3. If any of these conditions exist, see your John Deere dealer for wear bar replacement.

M30915

Adjusting Rear Suspension Springs

Rear suspension springs (A) are in the middle position when assembled at the factory. Ride the snowmobile. If ride needs to be stiffer move the springs to the upper position. If the ride needs to be softer move the springs to the lower position.

NOTE: To change spring position, remove long arm of spring from front retainer (B), and pull out and down. Move short arm of spring to desired position and replace long arm on retainer.

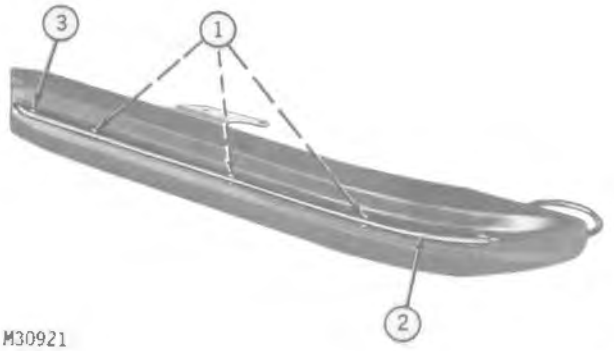
M30916

Adjusting Front Suspension Springs

1. Turn adjusting nut (A) counterclockwise to reduce tension, clockwise to increase tension.
2. In deep snow (for more lift) increase tension. In light snow (for more steering control) reduce tension.

IMPORTANT: Never turn adjusting nut (A) all the way out. Screw (B) must protrude at least 1/2 inch (12.7 mm) through adjusting nut (A).

SKIS



M30921

M30921

Replacing Ski Wear Rods

Wear rods should be replaced when they are worn to one-half their original size.

1. Remove lock nuts securing wear rod to ski.
2. Pry rod down to free studs from holes.
3. Slide rod forward to remove rod from rear hole.
4. Install new rod in opposite sequence.

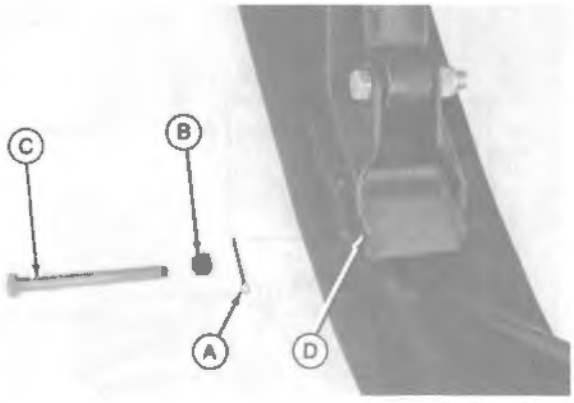
tion when assembled at the factory. Ride the snowmobile. If ride needs to be stiffer move the springs to the upper position. If the ride needs to be softer move the springs to the lower position.

NOTE: To change spring position, remove long arm of spring from front retainer (B), and pull out and down. Move short arm of spring to desired position and replace long arm on retainer.

Replacing Ski Wear Plates

Replace wear plates when excessively worn.

1. Remove cotter pin (A), nut (B) and bolt (C).
2. Lift spring and remove wear plate (D).
3. Install new wear plate (D).
4. Lower spring and install bolt, nut and cotter pin.



M30917

A—Bolt
B—Nut
C—Cotter Pin
D—Wear Plate

Aligning Skis

When properly aligned, skis are parallel and handlebars are positioned straight ahead.

1. Loosen jam nuts. Gold-colored tie rod ends have left-hand threads. Loosen opposite normal rotation.
2. Turn tie rod to align skis. Measure from straight edge of skis; not tapered ends.

IMPORTANT: When adjusting tie rods, length from center hole-to-center hole should not exceed 14-1/2 inches (36.8 cm).

3. Tighten jam nuts. Hold tie rod with vice grips when tightening jam nuts. This prevents stripping threads in ball joint.

IMPORTANT: After jam nuts are tight, be sure tie rod ends still swivel freely.

M33142

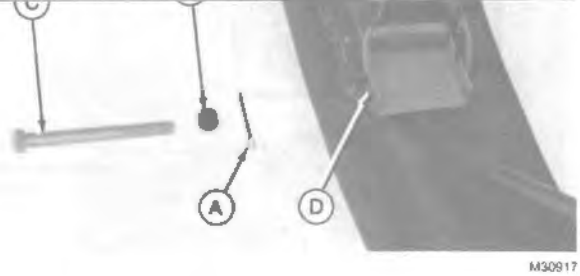
Eliminating Loose Steering

CAUTION: Check steering components and hardware frequently for condition and tightness.

The two major causes of loose steering are:

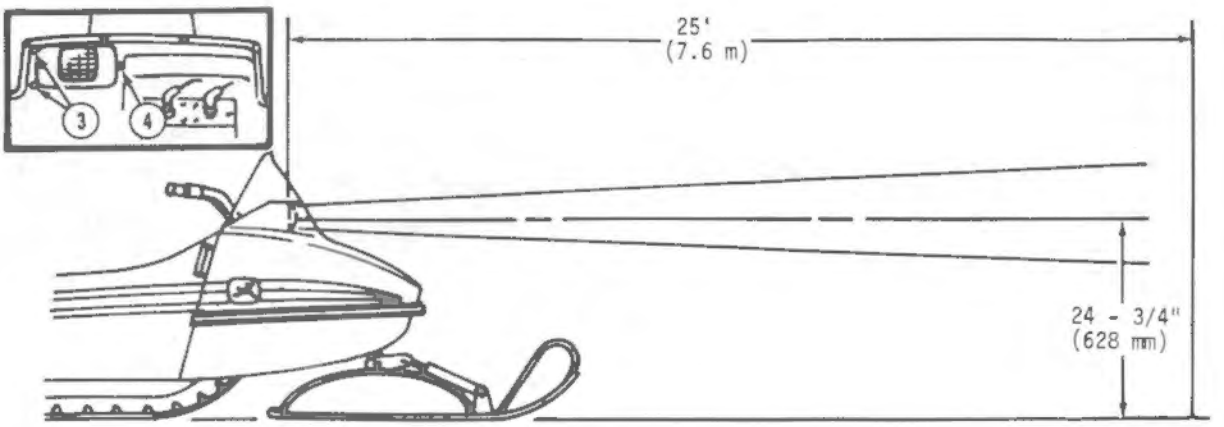
1. Excessively worn tie rod ends.
2. Excessively worn spindle bushings.
3. Replace or tighten parts as required.

2. Lift spring and remove wear plate (D).
3. Install new wear plate (D).
4. Lower spring and install bolt, nut and cotter pin.



M30917

LIGHTING SYSTEM



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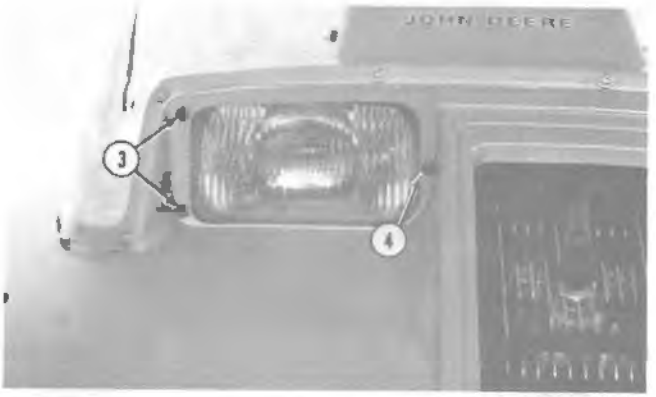

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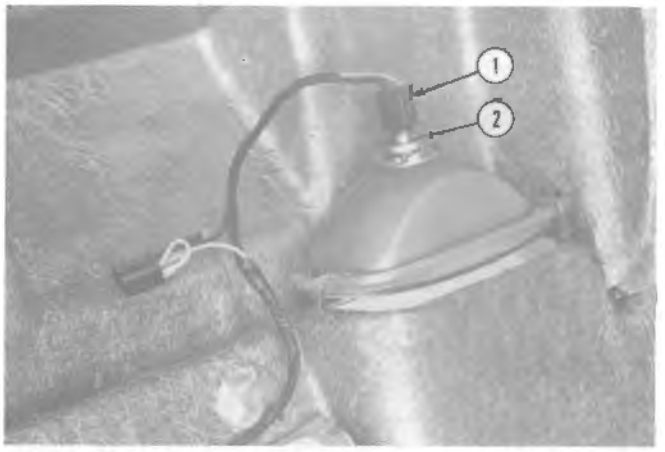


Adjusting Headlight

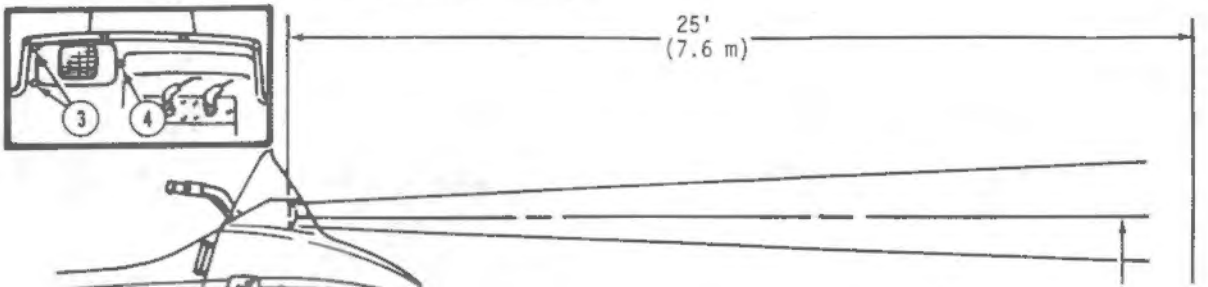
1. Position snowmobile on a flat surface with the headlight 25 feet (7.6 meters) from a vertical surface.
2. Have operator on seat and headlight on HIGH beam. Light beam centerline should be straight ahead and 24-3/4 inches (628 mm) above ground level.
3. Loosen or tighten the two left-hand adjusting screws to raise or lower the light beam.
4. Loosen or tighten the right-hand adjusting screw to move the light beam right or left.

Replacing Headlight

1. Disconnect wiring harness from light bulb.
2. Push and turn bulb counterclockwise to remove bulb.
3. Install new bulb in opposite sequence.

IMPORTANT: Be sure bulb locking tabs match slots.

4. Connect wiring harness to light bulb.



Replacing Stop-Taillight Bulb

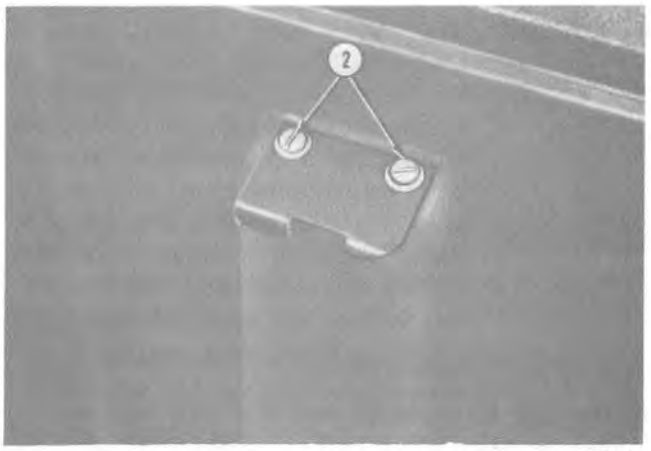
1. Remove lens.
2. Push and turn bulb counterclockwise to remove it.
3. Install new bulb in opposite sequence.

IMPORTANT: Be sure bulb locking tabs match slots.

M30852

Adjusting Glove Box Door Latch

1. Open glove box door.
2. Loosen screws and move latch forward or backward.
3. Tighten screws.



M28354

3. Install new bulb in opposite sequence.

IMPORTANT: Be sure bulb locking tabs match slots.

M30852

Storage

PLACE SNOWMOBILE IN STORAGE

1. Thoroughly clean snowmobile.
2. Polish hood, pan and tunnel with automotive-type wax. Use upholstery cleaner on seat. Touch-up all bare metal parts with paint.
3. Check cap screws and components for tightness. Order any new parts required.

IMPORTANT: Use John Deere Gasoline Storage Stabilizer (TY6295) or equivalent in the fuel tank. Gasoline storage stabilizer should always be used when storing the snowmobile to prevent carburetor varnishing and partial plugging of carburetor jets. Either of these conditions could cause the engine to run lean and result in piston seizure and engine failure.

4. Replace in-line fuel filter.
5. Remove spark plugs and add one teaspoon of 2-cycle oil in each cylinder. Pull recoil start rope six or seven times to lubricate cylinder walls. Replace plugs.
6. Remove drive belt and coat drive and driven sheaves with light grease.
7. Support snowmobile so track is clear of ground. Loosen track adjusting screws.
8. Place cover on snowmobile and store inside.

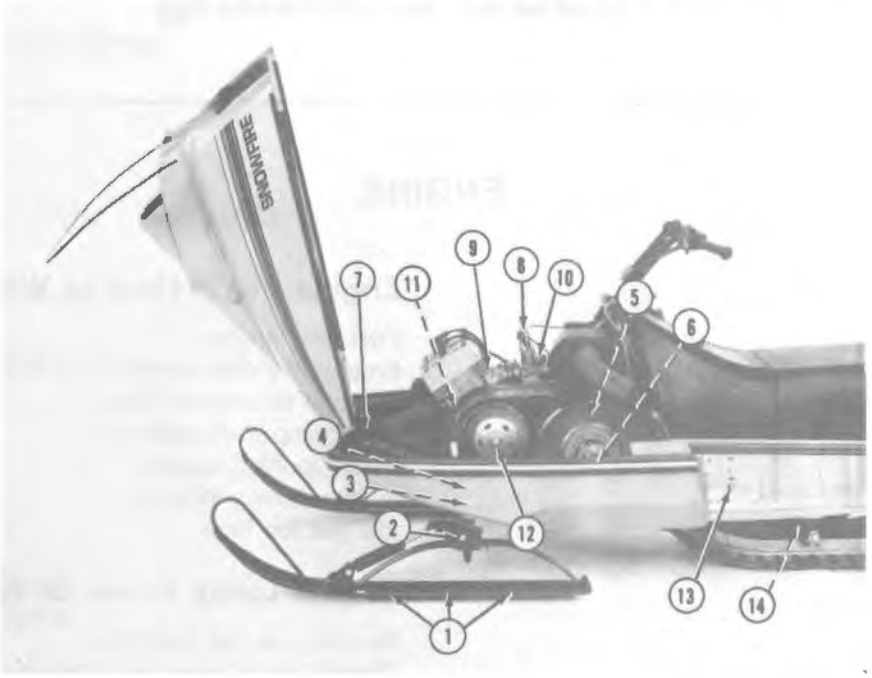
REMOVE SNOWMOBILE FROM STORAGE

1. Wipe grease from drive and driven sheaves. Install drive belt.
2. Fill fuel tank with properly mixed fuel.
3. Check throttle and brake controls for proper adjustment and operation.

PLACE SNOWMOBILE IN STORAGE

1. Thoroughly clean snowmobile.

TIGHTENING HARDWARE AND COMPONENTS

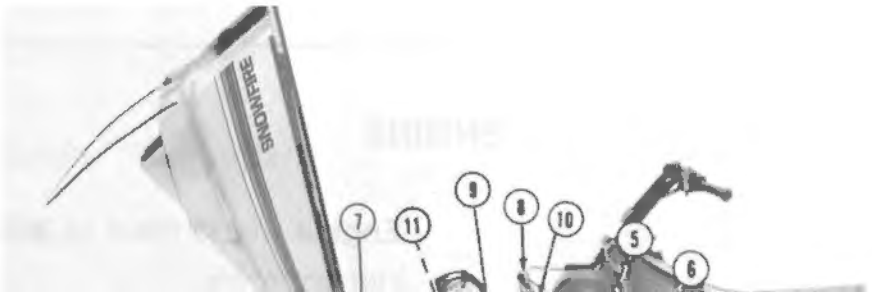


M33144

Check hardware and components for tightness, wear and damage on a yearly basis. Replace any parts that are questionable.

CAUTION: Worn, bent or damaged ski and steering components are unsafe.

1. Wear rod nuts.
2. Ski bolts.
3. Steering arm bolts.
4. Tie rod end bolts.
5. Drive shaft bearing cap screws.
6. Driven sheave cap screw.
7. Muffler spring.
8. Throttle and choke cables.
9. Intake manifold nuts.
10. Carburetor attachment.
11. Engine mounting bolts.
12. Drive sheave cap screw.
13. Suspension cap screws.
14. Shock absorber screws.



Trouble Shooting

ENGINE

Engine Starts Hard or Will Not Start

Fuel tank empty.
Emergency stop switch in "STOP" position.
Plugged in-line fuel filter.
Fuel pump malfunctioning.
Faulty ignition system.
Ignition timing incorrect.
Idle set too high.

Engine Lacks Power or Acceleration

Running on one cylinder.
Throttle cable improperly adjusted.
Improper fuel mixture.
Carburetor out of adjustment.
Restricted in-line fuel filter.
Ignition timing incorrect.
Center distance between drive and driven sheaves too short for belt.

Engine Backfires and Runs Unevenly

Ignition timing incorrect.
Fuel mixture too lean.

Engine Overheats

Carburetor too "lean".
Intake manifold or carburetor leaking.

LIGHTS

Stoplight Not Working

Bulb burned out.
Stoplight switch defective.
Stoplight switch "frozen".

Lights Won't Light

ENGINE

Engine Starts Hard or Will Not Start

POWER TRAIN AND CHASSIS

Clutch Does Not Disengage

Engine idles too fast.
Faulty clutch.
Short drive belt.

Clutch Engages Slowly

Faulty clutch.
Stretched or worn drive belt.

Excessive Drive Belt Wear

Freeing frozen track with engine.
Drive and driven sheaves misaligned.
Driving long distances at clutch engagement speed.

Rapid Track Wear

Operating on bare ground.
Track improperly tensioned.

SKIS AND STEERING

Loose Steering

Worn tie rod ends.
Worn spindle bushings.

Poor Maneuverability

Worn ski wear rods.
Loose steering linkage.

Engine idles too fast.
Faulty clutch.
Short drive belt.

Clutch Engages Slowly

Faulty clutch.
Stretched or worn drive belt.

Specifications

SNOWMOBILE SPECIFICATIONS

Component	Item	Specification
Engine	Manufacturer	John Deere "Fireburst"*
	Model	TB340A
	Number of Cylinders	Two
	Bore	60 mm
	Stroke	60 mm
	Displacement	339 cc
Fuel System	Carburetor Mfgr.	Mikuni
	Carburetor Number	AM55671
	Tank Capacity	5.5 U.S. gal. (20.8 L)
	Fuel Mixing Ratio	50:1 See page 6
Chassis and Tunnel	Material:	
	Tunnel and Pan	Aluminum
	Hood	Sheet Molded Compound
	Windshield	Polycarbonate
	Overall Length	98 in. (2489 mm)
	Overall Width	37.4 in. (950 mm)
	Overall Height	38.0 in. (965 mm)
	Weight (Approx.)	310 lbs. (141 kg)
Track and Suspension	Suspension Type	Slide Suspension
	Track Material	Rubber
	Track Width	15 in. (38.1 cm)
Power Train	Transmission:	
	Type	2-Sheave Variable
	Manufacturer:	
	Primary	John Deere (94C Comet)**
	Secondary	John Deere
	Final Drive Ratio:	
	Secondary Clutch	Low - 4.5:1, High - 1.23:1
	Brake	Mechanical Disk
	Drive Belt	M68715
Electrical System	Spark Plug (Champion)	ON-3 (AM55045)
	Spark Plug Gap	0.025 in. (0.635 mm)
	Timing	Align mark on stator with mark on crankcase
	Lighting Coil Capacity	120 Watts
	Light Bulbs:	

SNOWMOBILE SPECIFICATIONS

FUEL AND OIL MIXTURES

UNITED STATES

Ratio	Oil	Fuel
40:1	1 pt. (0.473 L)	5 gal. (18.9 L)
50:1	1 pt. (0.473 L)	6 gal. (22.7 L)

CANADA

Ratio	Oil	Fuel
40:1	1 U.S. pt. (0.473 L)	4 Imperial gal. (18.2 L)
	1 Imperial pt. (0.568 L)	5 Imperial gal. (22.7 L)
50:1	1 U.S. pt. (0.473 L)	5 Imperial gal. (22.7 L)
	1 Imperial pt. (0.568 L)	6 Imperial gal. (27.3 L)

NOTE: United States gallon contains 3.785 liters and the Canadian Imperial gallon contains 4.543 liters.

(Specifications and design subject to change without notice.)

When in need of major parts or service, be prepared to provide your John Deere dealer with both the Product Identification Number (A) and engine serial number (B). Record these numbers in the space below.

This operator's manual is prepared for: John Deere SNOWFIRE Snowmobiles (Serial No. J34XM 222001M-285,000 and for PIN No. MOSNFRX 285001-).

Product Identification Number

JOHN DEERE SNOWFIRE SNOWMOBILES

Product Identification No. MOSNFRX 285195

Engine Serial No. TB340A-C202

Date of Purchase 11-83

(To be filled in by purchaser)

Ratio	Oil	Fuel
40:1	1 pt. (0.473 L)	5 gal. (18.9 L)
50:1	1 pt. (0.473 L)	6 gal. (22.7 L)

Ratio	Oil	Fuel
40:1	1 U.S. pt. (0.473 L)	4 Imperial gal. (18.2 L)
	1 Imperial pt. (0.568 L)	5 Imperial gal. (22.7 L)
50:1	1 U.S. pt. (0.473 L)	5 Imperial gal. (22.7 L)

Accessories

1. Speedometer.
2. Tachometer.
3. Protective Cover.
4. Hitch Kit.
5. Optional Track Drive Sprockets.
6. Primer Kit.
7. Handlebar Heater Kit.
8. High Altitude Kit.
9. Quartz Halogen Light.
10. H.D. Hitch Kit.
11. Hitch Pin and Cable Kit.
12. Drive Belt Holder Kit.
13. Track Guide Clips.

Accessories

1. Speedometer.
2. Tachometer.