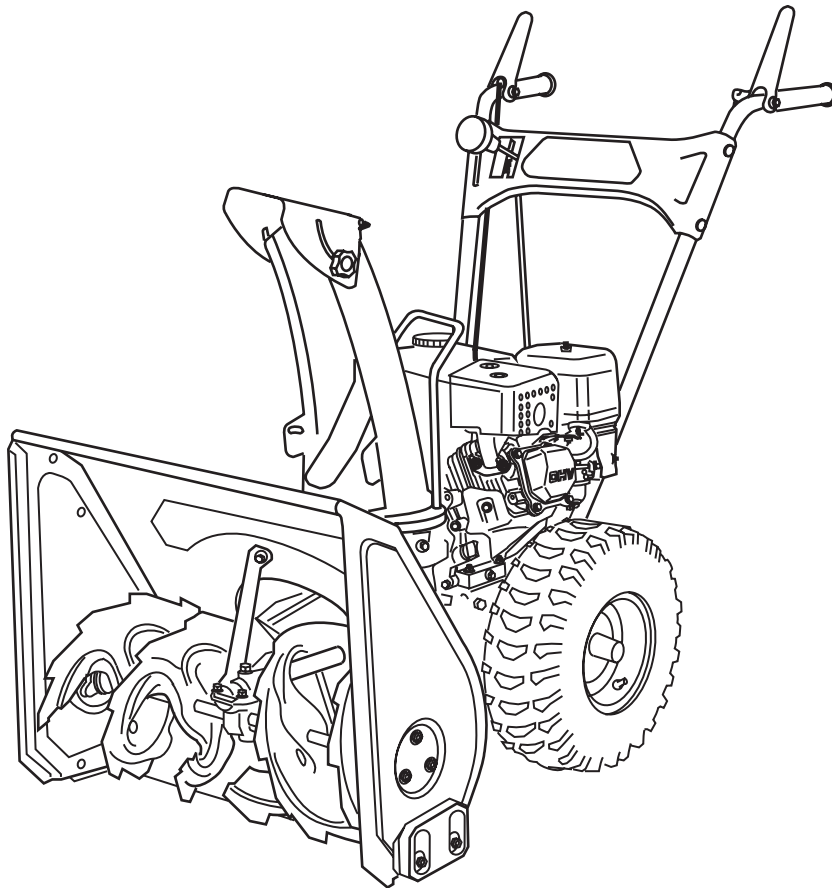




DIRTY HAND
TOOLS

21" SNOW BLOWER



MODEL # 101487

Operation Manual



This safety alert symbol identifies important safety messages in this manual. Failure to follow this important safety information may result in serious injury or death.

Part # 101475 Rev G

Designed & Engineered in Colorado, USA



Assembled with Foreign & Domestic Components

For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools® is a brand of



FrictionlessWorld

1100 W 120th Ave, Suite 600
Westminster, CO 80234 • 720-287-5182

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Important Safety Information



WARNING

WARNING: Read and thoroughly understand all instructions and safety information before operating this Snow blower. Failure to do so may cause serious injury or death. Do not allow anyone to operate this Snow blower who has not read this manual. As with all power equipment, a snow blower can be dangerous if used improperly. Do not operate this snow blower if you have doubts or questions concerning safe operation.



Call our customer service department at **720-287-5182**, **1-877-487-8275**, or visit www.dirtyhandtools.com if you have any questions or concerns about the safe operation of this equipment.



DANGER

Intended Use

Do Not Use the Snow blower for any purpose other than for which it was designed. Any other use is unauthorized and may result in serious injury or death.

Personal Protective Equipment

Wear ANSI-approved safety goggles, heavy-duty work boots and gloves during set up and operation. While this snow blower operates at a relatively low noise level, about 74dB, you may want to wear ear plugs or noise deafening headphones.



DANGER

A SNOW BLOWER IS CAPABLE OF AMPUTATING HANDS AND FEET AND THROWING OBJECTS. FAILURE TO OBSERVE THE SAFETY INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.



CALIFORNIA PROPOSITION 65 WARNING

Engine exhaust, some of its constituents and certain product components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.



DIRTY HAND
TOOLS

Important Safety Information

General Safety

Failure to follow warnings, cautions, assembly and operation instructions in the Operation Manual may result in serious injury or death.



DANGER

READ THE OPERATION MANUAL BEFORE OPERATION.

- **Do not** permit children to operate this equipment at any time. Do not permit others that have not read and understood the complete Operation Manual to operate this equipment.
- **Do not** operate the snow blower when under the influence of alcohol, drugs or medication.
- **Do not** allow a person who is tired, or otherwise impaired, or not completely alert to operate the snow blower.



DANGER

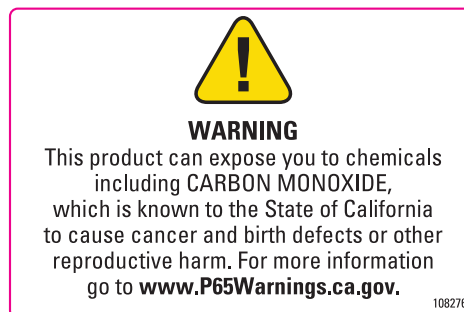
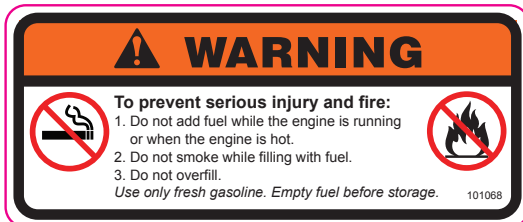
NEVER place fingers, hands, or body near the snow blower when it is running. Do not lean or reach over the snow blower. Do not aim the discharge at a person or animal.

- Keep all safety guards in place and in proper working order.
- Keep all people (except the operator) a minimum of 25 feet from the snow blower during operation.
- Do not transport the snow blower with the engine running.
- Do not tilt the machine while the engine is running.
- Do not leave the snow blower unattended when it is running. Turn off the engine before leaving the area.
- **Never run the engine in an enclosed area** or without proper ventilation as the exhaust from the engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous.
- Fill the gasoline tank outdoors with the engine off and allow the engine to cool completely.
- Do not operate the engine with the air cleaner or cover over the carburetor air-intake removed, except for adjustment. Removal of such parts could create a fire hazard.
- The muffler and engine become very hot with use and can cause a severe burn; do not touch. Allow the engine to cool before refueling, doing maintenance, or making adjustments.

Important Safety Information

Safety Decals

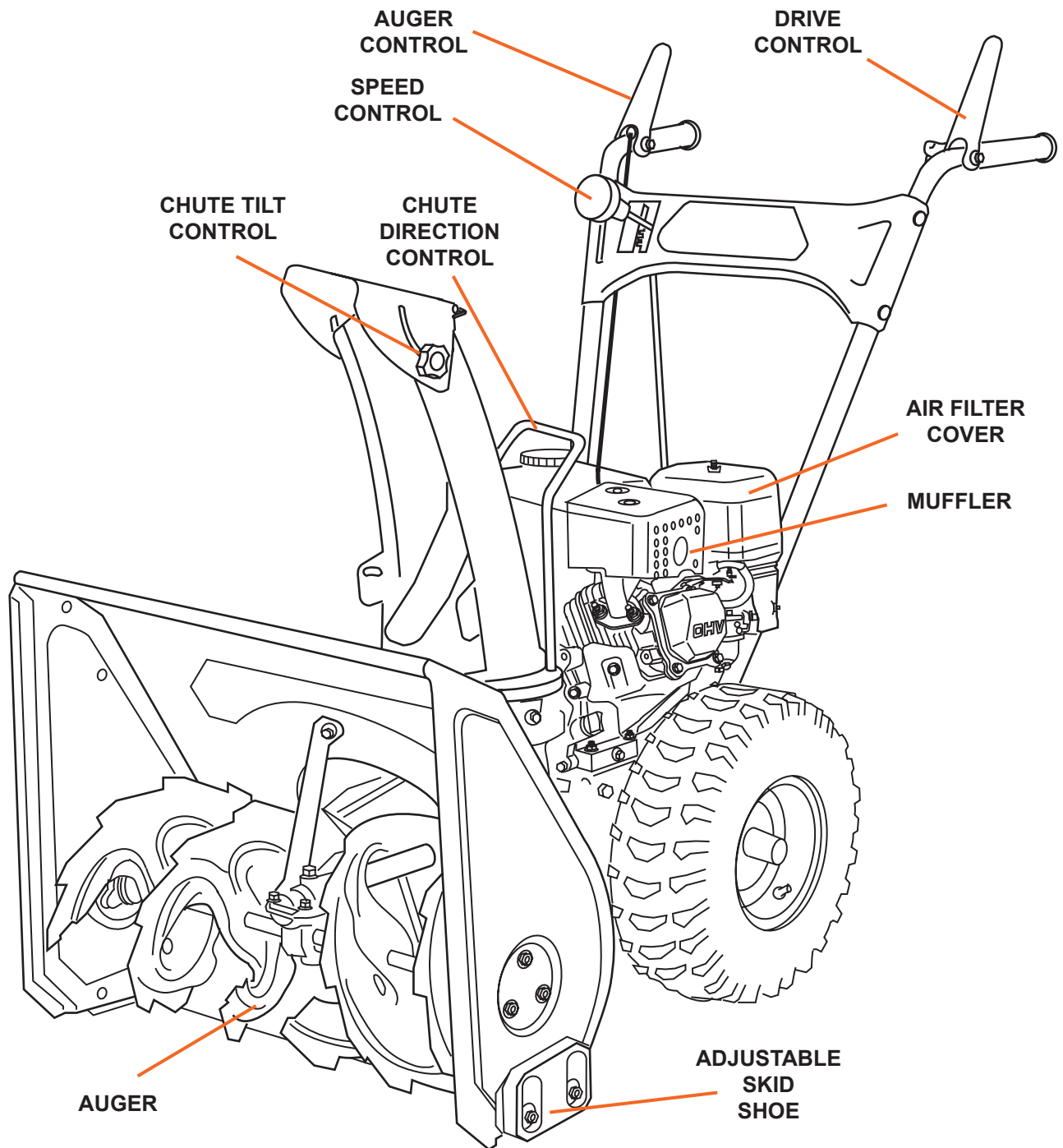
Safety labels on the snow blower are to remind you of important information while you are operating the unit. Make sure all safety warning decals are attached and in readable condition. Replace missing or defaced decals. Contact Dirty Hand Tools at 1-877-487-8275 for replacement decals.



Overview

Your snow blower requires some assembly. Save the packing materials and box for future use as a storage container.

COMPLETELY READ AND UNDERSTAND THE OPERATOR'S MANUAL BEFORE ATTEMPTING TO OPERATE THE SNOW BLOWER.



Handlebar and Control Assembly

1. Carriage bolts, curved washers and nylon lock nuts have been provided in a hardware package. Align the two holes at each end of the handlebar with the two holes in the handlebar support on the snow blower. Push carriage bolts through from the outside and secure with curved washer and nylon lock nut on the interior in two places on both sides of the snow blower. Tighten securely (see Figure 1).
2. Attach the drive wire on the left side of the snow blower (see Figure 2). Remove the R-clip that connects the drive wire to the control lever on the handlebars, then slip the wire off. Attach the other end of the drive wire with the spring mechanism to the connection ring and reattach the drive wire to the control lever reinserting the R-clip. After connecting the wire adjust the tension. The wire should be taught when connected. (See Control Wire Adjustment, page 23).
3. Attach the auger wire on the right side of the snow blower (see Figure 3). Remove the R-clip that connects the auger wire to the control lever on the handlebars, then slip the wire off. Attach the other end of the auger wire with the spring mechanism to the connection and reattach the auger wire to the control lever reinserting the R-clip. After connecting the wire adjust the tension. The wire should be taught when connected. (See Control Wire Adjustment, page 23).
4. Attach the speed shift rod and secure with a R-clip that has been included in the hardware package (see Figure 3).

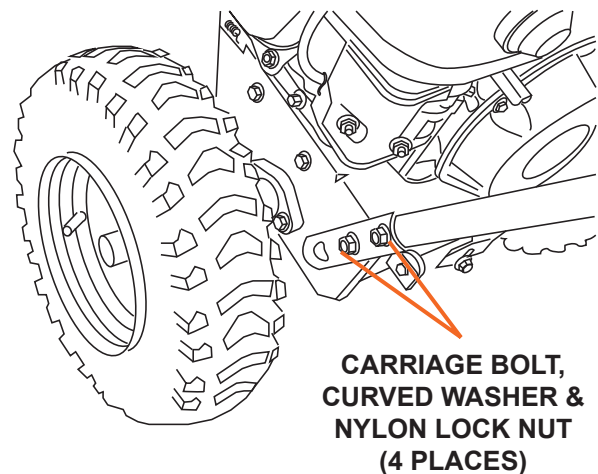


Figure 1

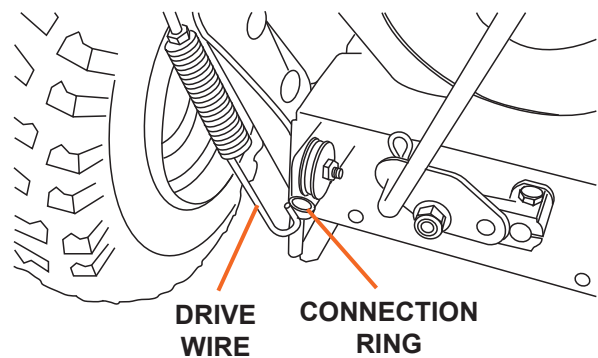


Figure 2

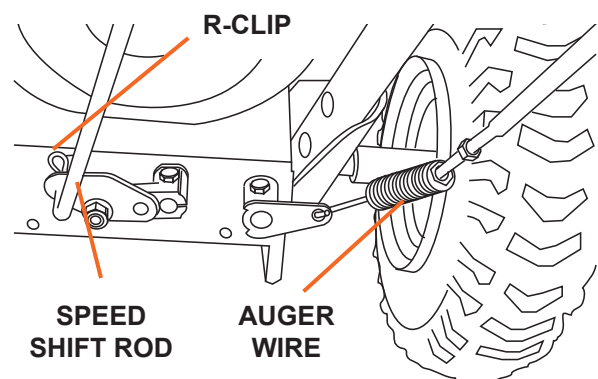


Figure 3

Assembly

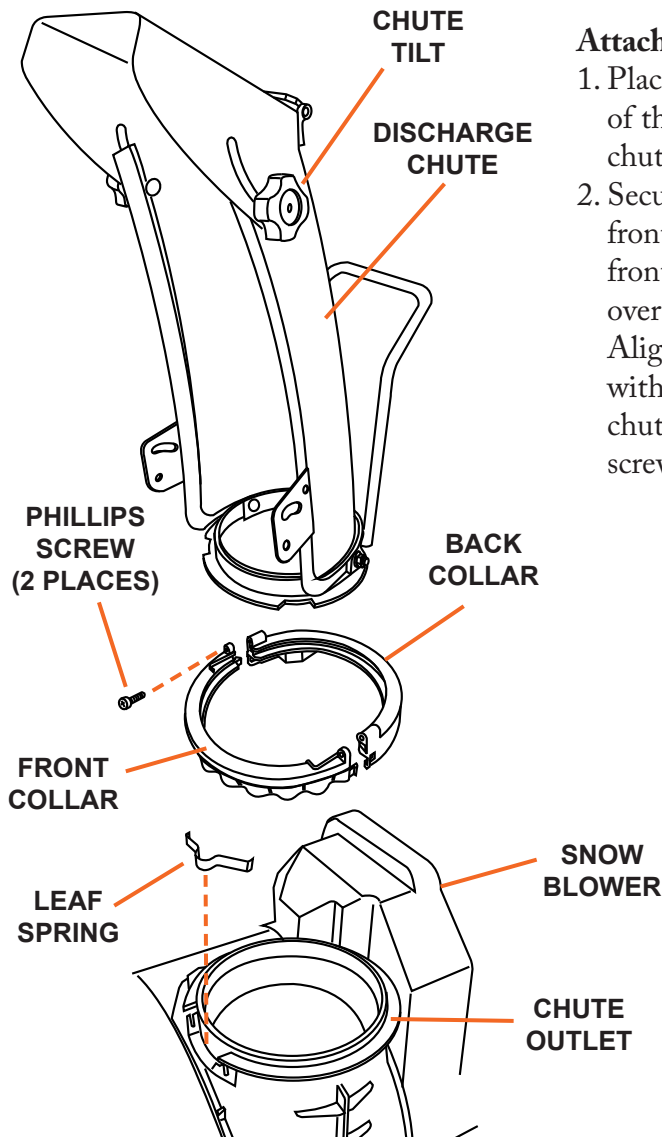


Figure 4

Attaching the Discharge Chute

1. Place the leaf spring from the hardware kit in the slot in front of the chute outlet on the snowblower. Place the discharge chute on the snowblower outlet (see Figure 4).
2. Secure the discharge chute to the outlet with the plastic collar front and back. Make sure that the ribbed collar is facing the front of the discharge chute. The back half of the collar will fit over both the discharge chute flange and the outlet port flange. Align the front half of the collar with the ribbed construction with the back half of the collar fitting it over both discharge chute flange and the flange on the outlet. Secure with a phillips screw on either side.

NOTE: The collar will “snap” together when aligned properly and secured with screws. When the discharge chute is correctly assembled it will “click” as it is rotated, catching the leaf spring and ribbed portion of the front collar as it is turned.

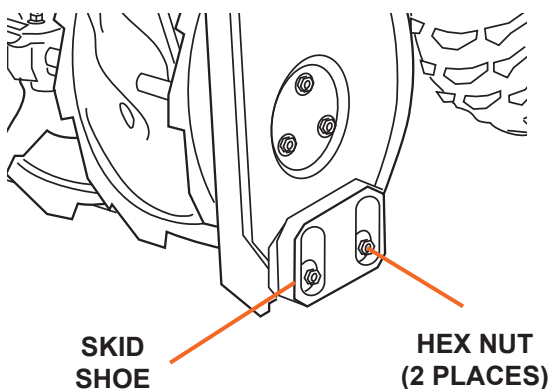


Figure 5

Adjusting the Skid Shoes

1. Position the skid shoes based on surface conditions. Adjust upward for hard-packed snow. Adjust downward when operating on gravel or crushed rock surfaces. Loosen the two hex nuts that retain the skid shoe in place and move up or down as desired, then retighten the lock nuts (see Figure 5). Repeat for the opposite side of the snow blower.

Filling with Gasoline and Oil



WARNING

FUEL IS HIGHLY FLAMMABLE AND POISONOUS

**ALWAYS FILL THE TANK WITH
ENGINE OFF AND COOL.**

**ALWAYS CHECK THE FUEL LEVEL
BEFORE OPERATING.**

Allow the engine to cool for at least two minutes before removing the fuel cap.

1. Place the snow blower on a level surface outdoors to fuel.
2. The fuel tank holds approximately 0.8 gallons of fuel. 87+ octane unleaded gasoline is recommended. Do not fill above the top of the fuel filter. Replace the fuel cap securely and wipe any excess from the fuel tank before starting the snow blower.



WARNING

**DO NOT REFUEL INDOORS OR NEAR ANY SOURCE
OF POSSIBLE COMBUSTION.**

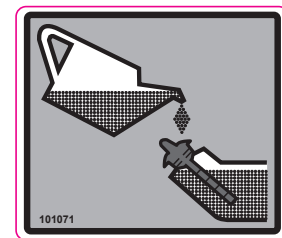
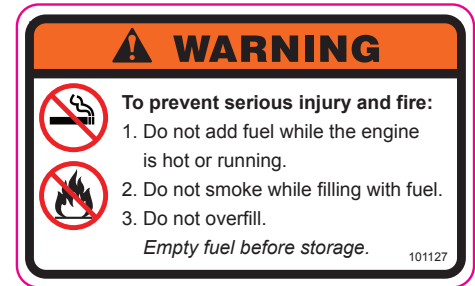
DO NOT SMOKE WHILE FUELING.

DO NOT OVERFILL.

**THE SNOW BLOWER IS SHIPPED WITHOUT
FLUIDS. YOU MUST ADD OIL BEFORE STARTING
THE ENGINE.**

3. Add engine oil to the upper level of the oil filler hole. SAE 10/30 motor oil is recommended for most environmental conditions. The oil capacity is 0.63 quarts (0.6L).

Note: Do not thread the dipstick in when checking the oil level.



Operation Precautions



DANGER

COMPLETELY READ AND UNDERSTAND THIS MANUAL BEFORE ATTEMPTING TO OPERATE THE SNOW BLOWER

1. Keep all safety guards in place and in proper working order at all times.
2. NEVER place fingers, hands, or body near the snow blower when it is running. Do not lean or reach over the snow blower when the machine is running.



DANGER

STOP THE ENGINE TO UNCLOG THE DISCHARGE CHUTE. NEVER USE YOUR HAND TO CLEAN OUT THE DISCHARGE CHUTE OR AUGERS.

3. Always stop the engine to dislodge snow from the discharge chute or from the augers. Wait ten seconds for the augers to stop rotating. Never use your hands to clear out the augers or discharge chute. Always use the clear-out tool provided or a similar tool.
4. Keep all people (except the operator) a minimum of 25 feet from the snow blower during operation.
5. Always aim the discharge chute away from people and animals.
6. Do not leave the snow blower unattended when it is running. Turn off the engine before leaving the area.
7. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.
8. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
9. Use extra caution when operating on gravel or other loose material.

Operation Precautions



CAUTION

DISENGAGE ALL CONTROL LEVERS AND STOP THE ENGINE BEFORE YOU LEAVE THE OPERATING POSITION.

Wait until the auger/impeller comes to a complete stop before unclogging the chute assembly, making any adjustments, or inspections.

1. Exercise caution to avoid slipping or falling, especially when operating in reverse.
2. Thoroughly inspect the area where the equipment is to be used. Remove all foreign objects, which could be tripped over or thrown by the auger/impeller.
3. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
4. Operate the equipment with appropriate footwear, gloves and clothing. Avoid loose fitting clothing that can get caught in moving parts.
5. After striking a foreign object, stop the engine, remove the wire from the spark plug, thoroughly inspect the snow blower for any damage, and repair the damage before restarting and operating the snow blower.
6. The auger and drive controls must be depressed to operate. Do not override this safety feature. Both control levers must operate easily and automatically return to the disengaged position when released.
7. Do not overload the snow blower by attempting to clear snow too quickly.
8. Do not operate at high speed on icy or slippery surfaces.
9. Always be sure of your footing especially when driving in reverse.
10. If the snow blower should vibrate abnormally, stop the engine immediately, disconnect the spark plug and inspect for damage

Operation Control

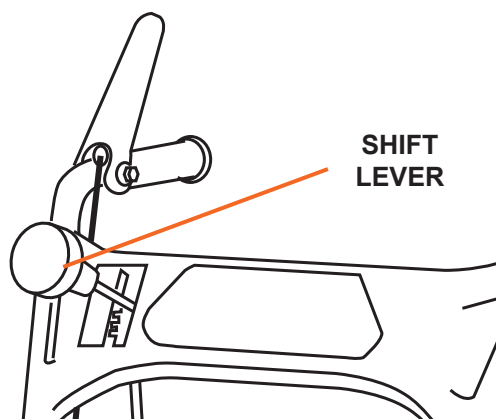


Figure 6

Shift Lever

The shift lever is located between the handles on the arm rest. Place the shift lever into any of five positions to control the direction of travel and ground speed. (see Figure 6).

Forward

There are four forward (F) speeds. Position one (1) is the slowest and position four (4) is the fastest.

Reverse

There is one reverse (R) speed.

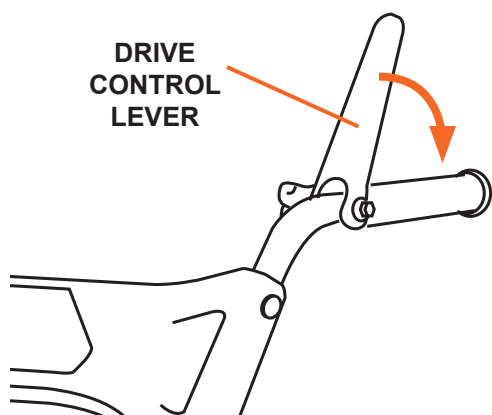


Figure 7

Drive Control

The drive control is located on the left handle (see Figure 7). The drive control engages the transmission and propels the snow blower forwards or backwards depending upon the shift lever placement. Select forward or reverse and the speed before depressing the drive control. Squeeze the control grip against the handle to engage the wheel drive. Release to stop.

Auger Control

The auger control is located on the right handle (see Figure 8). The auger control engages the rotating auger and pushes snow upwards through the discharge chute. Squeeze the control grip against the handle to engage the augers and start snow throwing. Release to stop.

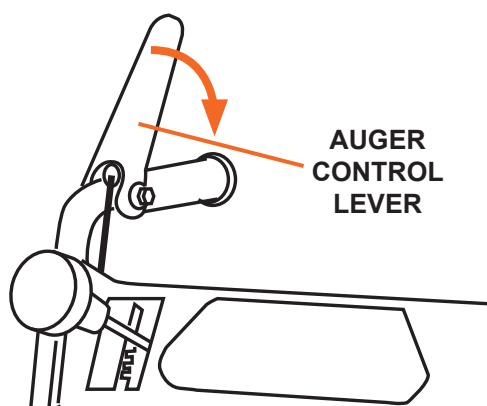


Figure 8

Discharge Chute Direction

Manually rotate the discharge chute to the direction that snow will be thrown. The top portion of the chute can be tilted up or down to throw the snow farther away or closer to the machine. Position the chute tilt then tighten with the adjusting knob.



CAUTION

FILL WITH OIL BEFORE STARTING

Make sure the auger control and drive control are in the disengaged (released) position.

Recoil Starter

1. To start a cold engine, move the choke to the CHOKE position (to the left). To restart a warm engine, leave the Choke in the RUN position (to the right). (See Figure 9).
2. Push the ignition key all the way in. Push the primer two or three times for cold engine start, making sure to cover vent hole in the center of the primer when pushing. **DO NOT** use primer to restart a warm engine after a short shutdown. Additional priming maybe necessary if the temperature is below 15° Fahrenheit.
3. Grip the recoil starter handle and pull slowly several times to allow the gasoline to flow into the engine's carburetor (see Figure 10). Then pull the recoil starter handle gently until resistance is felt. Allow cable to retract fully and then pull it quickly. Repeat until the engine starts.
4. Allow the engine to run for several seconds. The engine will not develop full power until it reaches the operating temperature. Then move the choke lever slowly to its RUN position (to the right). Moving the choke lever too fast could stall the engine.

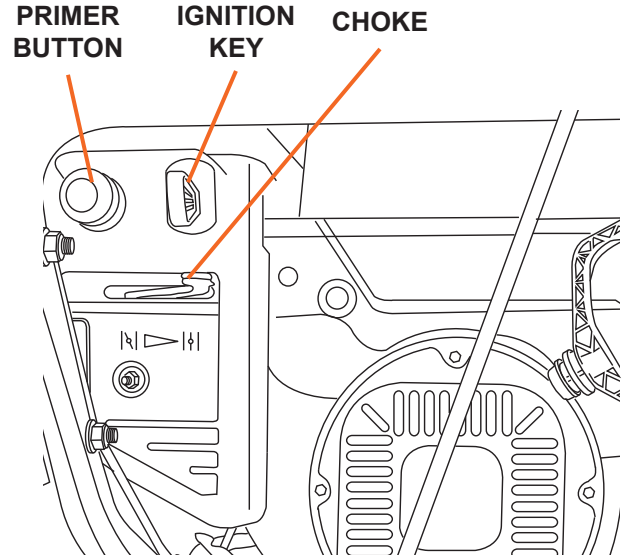


Figure 9

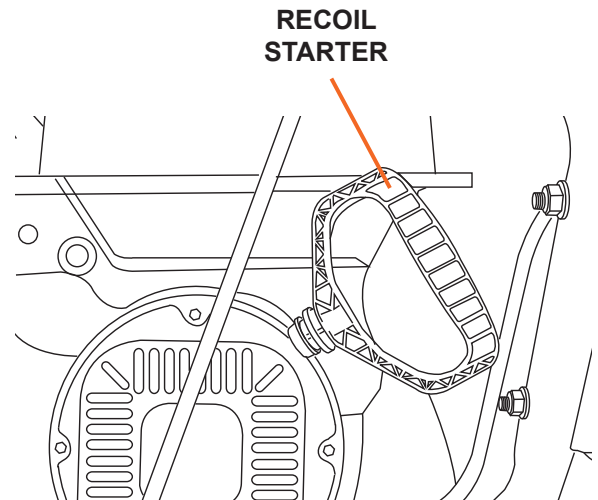


Figure 10

Operation

Engaging the Drive and Auger Controls

1. With the choke control in the open position, move shift lever into one of the four forward (F) or one reverse (R) positions. Select a speed appropriate for the snow conditions and a pace you're comfortable with. When selecting a drive speed, use slower speeds until you are familiar with the operation of the snow blower.
2. Squeeze the auger control against the handle and the auger will turn. Release it and the augers will stop.
3. Squeeze the drive control against the handle and snow blower will move. Release it and drive motion will stop.



CAUTION

**Do not reposition the shift lever
(change speeds or direction of travel)
without first releasing the drive control
and bringing the snow blower to a complete stop.**

Shifting between speeds or directions while the drive control is engaged will result in premature wear to the snow blower's drive system.

4. Release both the auger control and the drive control to redirect the discharge chute.
5. To move from forward to reverse, release the drive control and the auger control and allow the rotating augers to stop before moving the shift lever to a new position.
6. **ALWAYS** release the auger and drive control and turn the engine off before dislodging snow accumulation from the augers or unclogging the discharge chute. **ALWAYS** use the clean-out tool provided. **NEVER** use your hands at any time to dislodge snow from the augers or unclog the discharge chute.

Maintenance



WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.

Disconnect the spark plug wire, keeping it away from the spark plug.

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the engine manufacturer's owner's manual for maintenance procedures.

Maintenance Checklist

Maintenance Procedure	Before Each Use	Monthly/ 20 Hours	Every 6 Mo./ 100 Hours	Annually/ 300 Hours
Check Engine Oil & Fuel Levels	X	X	X	X
Check General Equipment Condition	X			
Lubricate Gear Shaft & Auger Shaft		X	X	X
Lubricate Wheels & Discharge Chute				X
Check Air Cleaner	X		X	X
Check Fuel Strainer	X		X	X
Clean/Replace Air Filter		X	X	X
Check/Clean Spark Plug*			X	X
Check/Adjust Idle Speed			X	X
Check/Adjust Valve Clearance			X	X
Clean Fuel Tank, Strainer & Carburetor			X	X
Change Oil				X
Clean Combustion Chamber**				X
Replace Fuel Lines**				X

* Replace spark plug if white insulator is cracked or chipped

** Service performed by qualified technician



WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING TURN THE POWER SWITCH OF THE ENGINE TO ITS “OFF” POSITION.

Wait for the engine to cool, and remove the spark plug wire before performing any inspection, maintenance, or cleaning procedures.

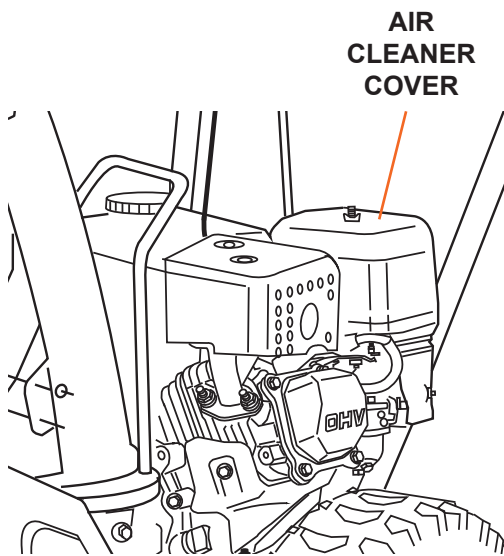


Figure 11

Changing /Cleaning the Air Filter

1. Wipe off the air cleaner cover. Loosen the knob at the bottom of the air cleaner housing (see Figure 11).
2. Remove the air cleaner filter.
3. Wash the air filter in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly, then squeeze out the excess oil.
4. Install a new air filter or reinstall the cleaned air filter. Secure the air cleaner cover before use.

Spark Plug Maintenance:

1. Disconnect spark plug wire from end of plug. Clean out debris from around the spark plug.
2. Using the spark plug wrench provided, remove the spark plug. Inspect the spark plug. If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. If the white insulator is cracked or chipped, replace the spark plug.
3. When installing a new spark plug, adjust the plug's gap to the specification on the technical specification chart. Do not pry against the electrode or the insulator, the spark plug can be damaged (see Figure 12).
4. Install the new spark plug or the cleaned spark plug into the engine. Gasket style spark plugs should be finger-tightened until the gasket contacts the cylinder head, then turned about 1/2 to 2/3 more rotation. Non-gasket-style spark plugs should be finger-tightened until the plug contacts the head, then about 1/16 turn more.

Spark Plug Gap
0.028"~ 0.031"

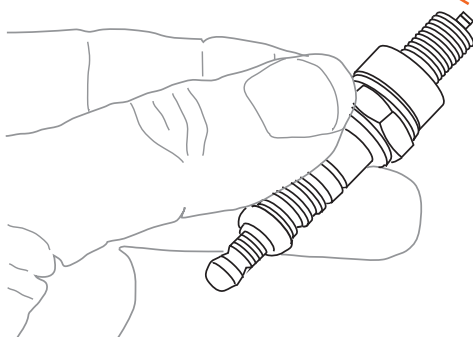


Figure 12



WARNING

OIL IS VERY HOT DURING OPERATION AND CAN CAUSE BURNS. WAIT FOR ENGINE TO COOL BEFORE CHANGING OIL.

Wait for the engine to cool, and remove the spark plug wire before performing any inspection, maintenance, or cleaning procedures.

Changing the engine oil

1. Make sure the engine is stopped and is level.
2. Close the fuel valve.
3. Place a drain pan underneath the crankcase's drain plug.
4. Remove the drain plug and, if possible, tilt the crankcase slightly to help drain the oil out.
5. Replace the drain plug and tighten it.
6. Clean the top of the dipstick and the area around it. Remove the dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.

Note: Do not thread the dipstick in when checking the oil level.

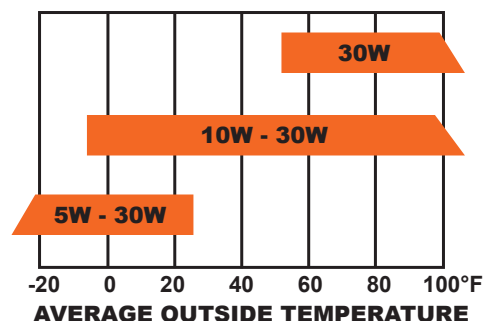
7. Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use for temperatures above 32°F. Use SAE 5W-30 for temperatures consistently below 32°F.
8. Thread the dipstick back in clockwise.



WARNING

DO NOT RUN THE ENGINE WITH TOO LITTLE OIL. THE ENGINE WILL BE PERMANENTLY DAMAGED.

SAE VISCOSITY GRADES



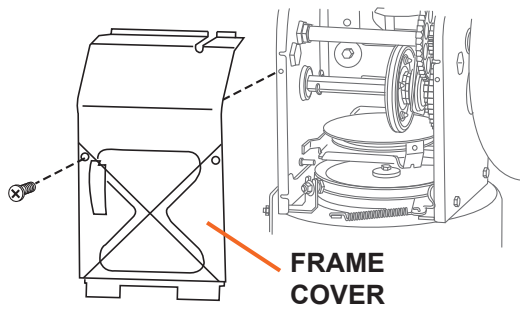


Figure 13

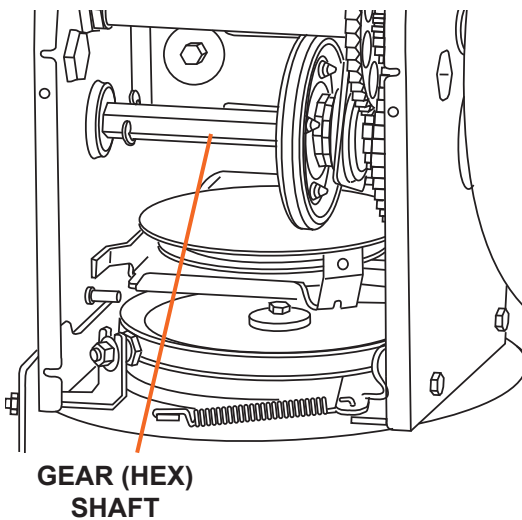


Figure 14

LUBRICATION

Gear Shaft

The gear (hex) shaft should be lubricated at least once a season or after every 20 hours of operation.

1. Remove the lower frame cover by removing the two screws which secure it (see Figure 13).
2. Apply a light coating of an all-weather multi-purpose grease to the hex shaft (see Figure 14).

Wheels

At least once a season, remove both wheels. Clean and coat the axles with a multipurpose automotive grease then reinstall.

Auger Shaft

At least once a season, remove the shear pins on the auger shaft (see Figure 15). Spray lubricant inside shaft, around the spacers. Also lubricate the flange bearings found at either end of the shaft.

Gear Case

The auger gear case has been filled with grease and sealed at the factory. If disassembled from any reason, lubricate with two ounces of new grease.

NOTE: Do not over fill the gear case. Damage to the seals could result. Be sure the vent plug is free of grease in order to relieve pressure.

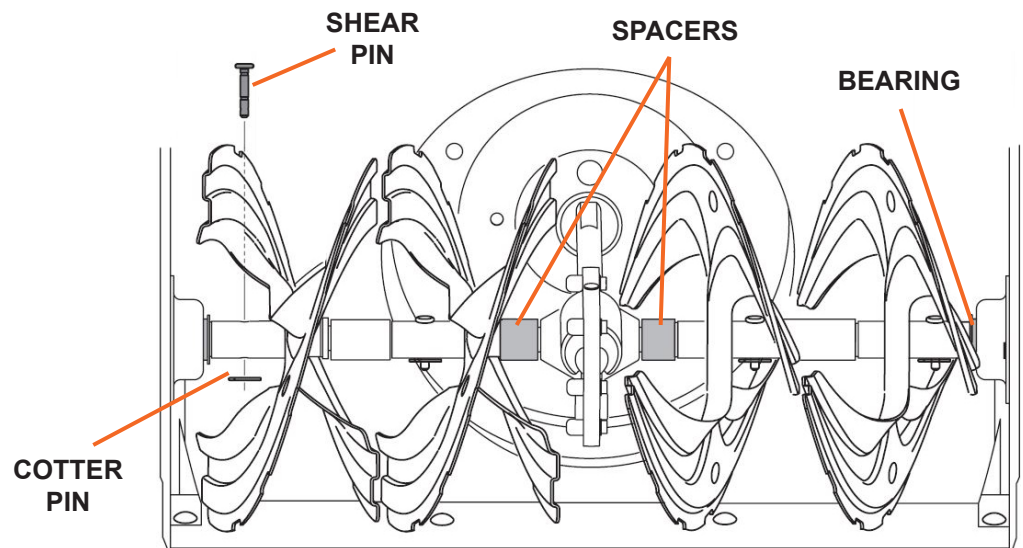


Figure 15

Maintenance

Shear Pin Replacement

The auger is attached to the spiral shaft with shear pins secured with cotter pins. If the auger should strike a foreign object or ice jam, the snow blower is designed to shear off those pins (see Figure 16). If the auger will not rotate, check if the pins have been sheared. When replacing shear pins, spray an oil lubricant into the shaft before inserting new pins.

Shave Plate and Skid Shoes

The shave plate and skid shoes on the bottom of the snow blower are subject to wear. They should be checked periodically and replaced when necessary.

To remove skid shoes:

1. Remove the four carriage bolts and hex flange nuts which secure them to the snow blower (see Figure 17).
2. Reassemble new skid shoes with the four carriage bolts (two on each side) and hex flange nuts.

To remove shave plate:

1. Remove the carriage bolts and hex nuts which attach it to the snow blower housing (see Figure 17).
2. Reassemble new shave plate, making sure heads of carriage bolts are to the inside of housing. Tighten securely.

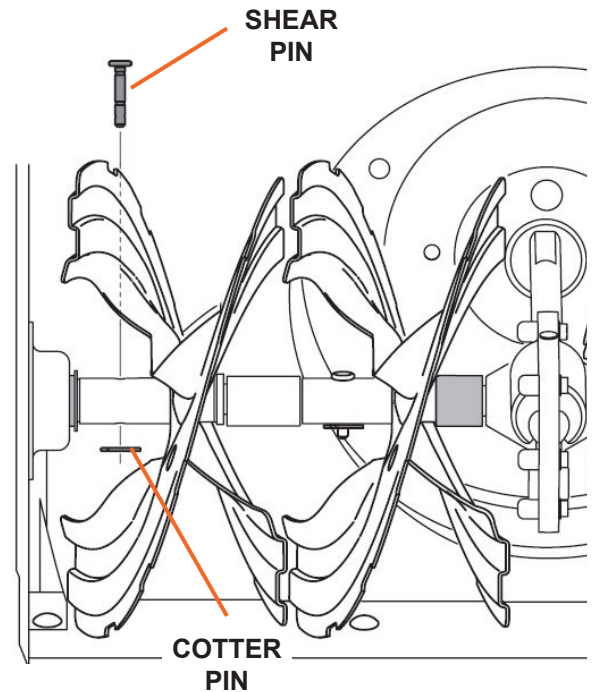


Figure 16

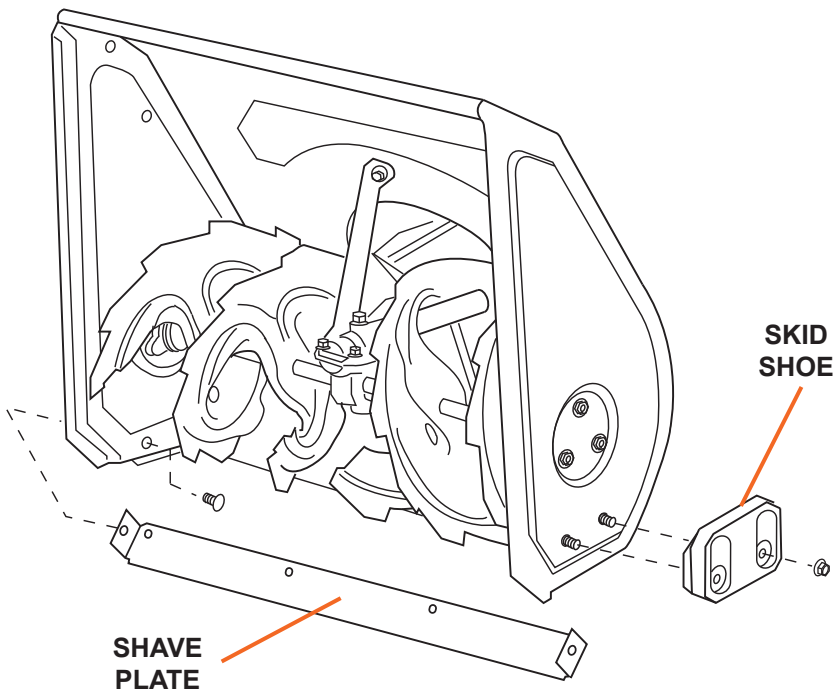


Figure 17

Maintenance

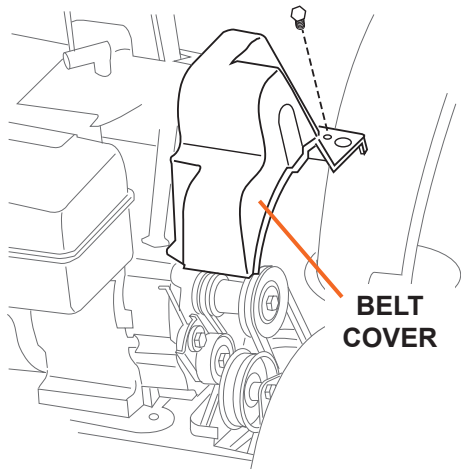


Figure 18

Auger Belt Replacement

1. Remove the belt cover on the front of the engine by removing the two self-tapping screws (see Figure 18). Drain the gasoline from the snow blower, or place a container to catch leakage from the gas cap.
2. Carefully pivot the snow blower up and forward so that it rests on the auger housing. Remove the frame cover from the underside of the snow blower by removing four self-tapping screws which secure it (see Figure 19).
3. Roll the auger belt off the engine pulley (see Figure 20).
4. Loosen and remove the shoulder screw which restrains the belt from jumping off of the pulley. Unhook the support bracket spring from the frame (see Figure 21).
5. Remove the belt from the auger pulley, slip the belt between the support bracket and the auger pulley (see Figure 22).
6. Attach a new auger belt and reassemble by following the instructions in reverse order.

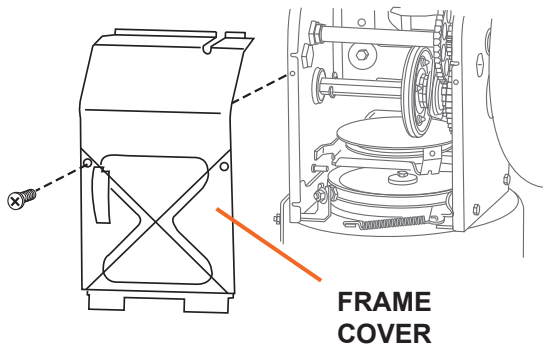


Figure 19

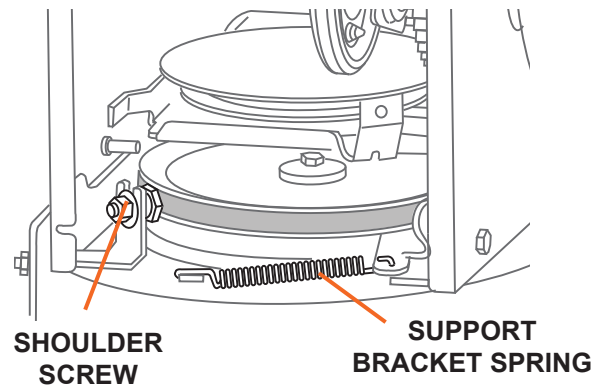


Figure 21

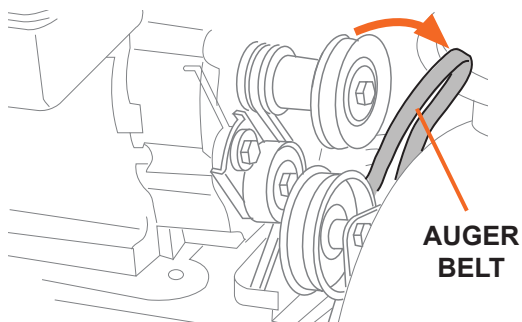


Figure 20

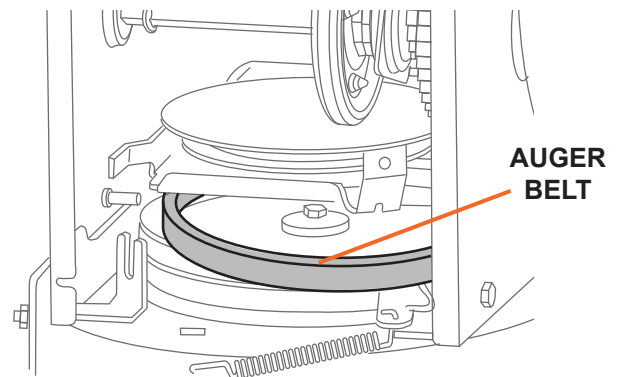


Figure 22

Maintenance

Drive Belt Replacement

1. Remove the belt cover on the front of the engine by removing the two self-tapping screws (see Figure 18). Drain the gasoline from the snow blower, or place a container to catch leakage from the gas cap.
2. Carefully pivot the snow blower up and forward so that it rests on the auger housing. Remove the frame cover from the underside of the snow blower by removing four self-tapping screws which secure it (see Figure 19).
3. Roll the auger belt off the engine pulley (see Figure 20).
4. Loosen and remove the shoulder screw which restrains the belt from jumping off of the pulley. Unhook the support bracket spring from the frame (see Figure 21).
5. Remove the belt from the auger pulley, slip the belt between the support bracket and the auger pulley (see Figure 22).
6. See Figure 23 and follow the steps below:
 - A Grasp the idler pulley and pivot it toward the right.
 - B Lift the drive belt off engine pulley.
5. Remove the belt from the drive pulley, slip the belt between the support bracket and the drive pulley (see Figure 24).
7. Attach a new drive belt, replace the auger belt and reassemble by following the instructions in reverse order.

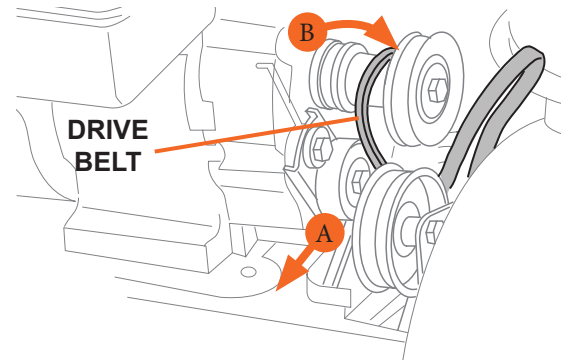


Figure 23

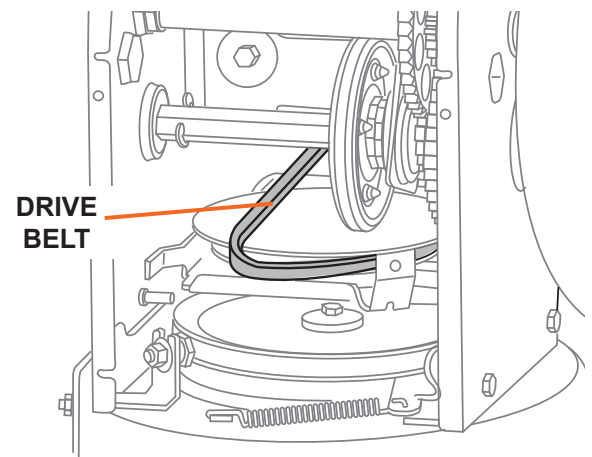


Figure 24

Maintenance

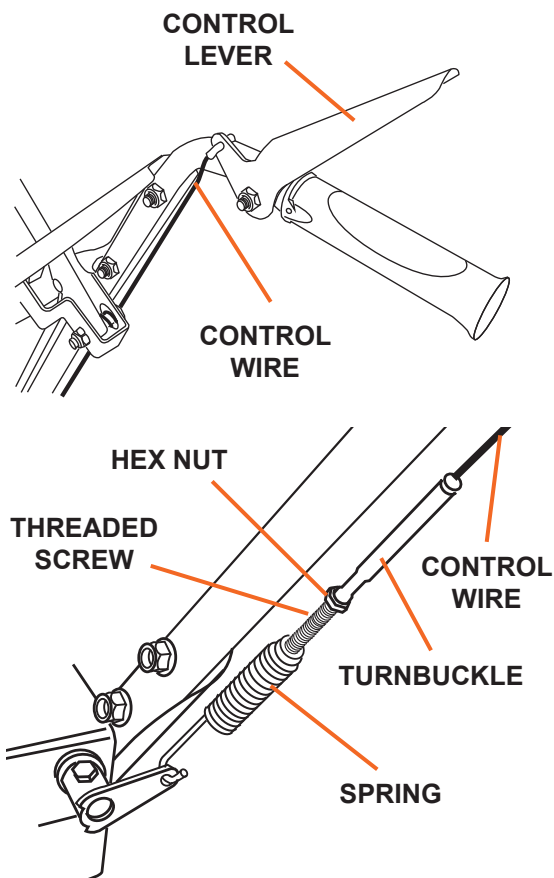


Figure 25

Control Wire Adjustment

When the auger or drive belts are adjusted or replaced, or after a long time of use, the control wires may need to be adjusted. The control wires for the drive control and the auger control are attached to the auger lever and the drive lever on the handlebar. There is a long threaded screw attached through the connecting spring near the base of the snow blower. The screw threads into the control wire turnbuckle which is secured by a hex nut. Make adjustments to the wire's tension with the lever in the upwards (disengaged) position (see Figure 25).

1. To adjust the tension loosen the hex nut, unthread the hex nut to move it down the screw length one half inch or more.
2. Next rotate the turnbuckle which threads the screw into the turnbuckle until the desired tension is achieved. You can also rotate the screw with a small diameter phillips head screwdriver placed up through the bottom of the spring.
3. Then rethread the hex nut until it is tight against the housing and tighten with pliers or wrench.

The control wire should be taught to operate correctly on both the auger and the drive controls.

Engine Troubleshooting



WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.

Disconnect the spark plug wire, keeping it away from the spark plug.

PROBLEM	SOLUTION
<p>The engine will not start.</p> <ul style="list-style-type: none"> • No fuel in tank or fuel valve closed. • Choke not in start position. • Low quality or deteriorated, old gasoline. • Dirty fuel passageways blocking fuel flow. • Carburetor needle stuck. Smell of fuel in air. • Too much fuel in chamber. • Spark plug wire not connected securely. • Spark plug electrode wet or dirty. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Cylinder not lubricated after long storage. • Clogged fuel filter. 	<ul style="list-style-type: none"> • Add fuel and open fuel valve. • Place choke in START position and pull recoil starter. • Drain fuel. Add fresh 87+ octane unleaded gasoline. • Clean out fuel passageways using fuel additive. • Gently tap side of carburetor with screwdriver handle. • Turn choke to RUN position. • Connect spark plug wire securely to spark plug. • Remove and clean spark plug. Reinstall spark plug and restart. • Reset spark plug gap according to specifications. • Replace spark plug and/or spark plug wire. • Remove spark plug. Pour tablespoon of oil into spark plug hole. Replace spark plug. Crank engine a few times and try to start. • Replace fuel filter. • If the engine still will not start, visit our web site at www.dirtyhandtools.com or call 1-877-487-8275 for assistance.
<p>Engine misfires, backfires or knocks.</p> <ul style="list-style-type: none"> • Spark plug wire loose. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Low quality or deteriorated, old gasoline. • Engine too cold. • Engine knocks. 	<ul style="list-style-type: none"> • Tighten spark plug wire. • Reset spark plug gap according to specifications (see page 17). • Replace spark plug and/or spark plug wire. • Drain fuel. Add new fresh 87+ octane unleaded gasoline. • Use cold weather fuel and oil additives. • Engine overloaded, do not exceed recommended load rating.
<p>Engine stops suddenly.</p> <ul style="list-style-type: none"> • Low quality or deteriorated, old gasoline. • Defective fuel cap creates vacuum. • Improper idle speed. • Incorrect timing, deposit buildup, worn engine or other mechanical problem. 	<ul style="list-style-type: none"> • Drain fuel. Add fresh 87+ octane unleaded gasoline. • Test and replace fuel cap. • Move choke to RUN position. • Requires qualified technician.

Snow Blower Troubleshooting

PROBLEM	SOLUTION
<p>No snow through blower's discharge chute.</p> <ul style="list-style-type: none"> • Discharge chute and/or auger is clogged • Auger is not rotating 	<ul style="list-style-type: none"> • Disengage the auger and drive controls, stop the engine, wait ten seconds for the auger to stop rotating, then using the clean-out tool provided, remove the snow clogging the chute. • Shear pin(s) are missing or broken and need to be replaced.
<p>Snow not completely removed from surface</p> <ul style="list-style-type: none"> • Skid shoe needs adjustment 	<ul style="list-style-type: none"> • Disengage the auger and drive controls, stop the engine, wait ten seconds for the auger to stop rotating. Loosen the two hex nuts on the skid show on either side of the snow blower. Raise the skid shoes so the entire bottom surface of the skid show rests on the ground evenly. Retighten the hex nuts on both sides. This adjustment allows the auger to come into closer contact with the ground surface.
<p>Snow not evenly removed from surface</p> <ul style="list-style-type: none"> • Tires not inflated evenly • Skid shoes not correctly adjusted 	<ul style="list-style-type: none"> • Check tire pressure, inflate both tires to the same pressure recommended (15-20 psi) so auger is level on the ground. • Make sure that skid shoes are at same height.
<p>Cannot adjust the discharge chute</p> <ul style="list-style-type: none"> • Moving parts are frozen 	<ul style="list-style-type: none"> • In extreme cold environments some controls and moving parts may freeze. Do not use excessive force to operate frozen controls. Allow the engine to run for several minutes to warm up and thaw frozen parts.
<p>Snow blower continually clogs</p> <ul style="list-style-type: none"> • Machine does not propel itself forward 	<ul style="list-style-type: none"> • Operate at a slower pace to allow the snow blower to dispel snow through the discharge chute. Forcing the snow blower to move faster than it can remove the snow will result in clogged auger and/or discharge chute. Do not overload the blower in extremely heavy or wet snow.

Snow Blower Troubleshooting

PROBLEM	SOLUTION
<p>Auger does not engage.</p> <ul style="list-style-type: none"> • Auger control wire is too loose. • Auger is not rotating. • Auger belt is off the pulley, broken or worn. 	<ul style="list-style-type: none"> • If there is too much slack in the auger control wire, the augers will not be engaged properly. Turn off the engine. Adjust the tension of the auger control wire (see page 23). • Shear pin(s) are missing or broken and need to be replaced. • Turn off the engine and allow to cool down for several minutes. Put the auger belt back on the pulley or replace the belt as needed. (See page 21).
<p>Snow blower does not propel itself. Drive control does not engage.</p> <ul style="list-style-type: none"> • Drive control wire is too loose. • Drive belt is off the pulley, broken or worn. • Friction wheel is worn. 	<ul style="list-style-type: none"> • If there is too much slack in the drive control wire, the drive will not be engaged properly. Turn off the engine. Adjust the the tension of the drive control wire (see page 23). • Turn off the engine and allow to cool down for several minutes. Put the drive belt back on the pulley or replace the belt as needed. (See page 22). • Refer to a qualified service technician for friction wheel replacement.
<p>Snow blower vibrates excessively.</p> <ul style="list-style-type: none"> • Damaged auger or loose parts. 	<ul style="list-style-type: none"> • Turn off the engine and allow to cool down for several minutes. Disconnect the spark plug wire. Examine the auger, replace shear pins if missing or broken, tighten all connecting bolts. If excessive vibration continues have the snow blower serviced by a qualified technician.

Storage



WARNING

DO NOT STORE SNOW BLOWER WITH FUEL IN TANK INDOORS

Do not store in poorly ventilated areas, or near furnace, water heater, clothes dryer or gas appliance.

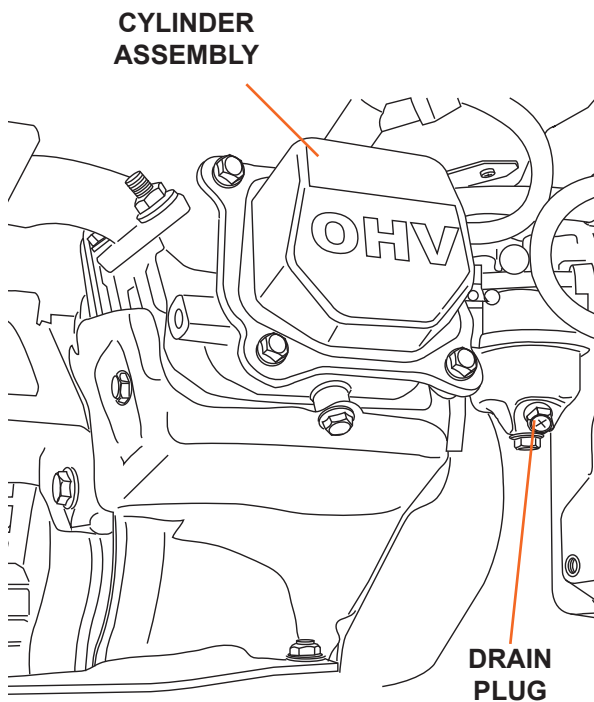


Figure 26

1. For short term storage wait for the engine to cool, then clean the engine with a clean cloth.
2. When the snow blower is to be stored for longer than 30 days, prepare the engine for storage by emptying the fuel tank and draining all fuel lines.

Note: As an alternative to draining the fuel system, a fuel stabilizer can be added to a full gas tank. Do not drain the carburetor if using a fuel stabilizer.

3. Run the engine until all the fuel has been consumed and the engine stops.
4. Drain the carburetor (see Figure 26).
5. Clean out area around spark plug and remove. Pour one tablespoon of engine oil into the cylinder through the spark plug hole. Reinstall the spark plug, but leave the spark plug wire disconnected. Pull recoil starter handle to distribute oil in the cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).
6. Apply a thin coat of rust preventive oil to all uncoated metal parts.
7. Cover and store in a dry, well-ventilated area out of reach of children.

Warranty & Specifications

IMPORTANT NOTICE

We, the manufacturer, reserve the right to change the product and/or specifications in this manual without notification. The manual is for information usage only and the pictures and drawings depicted herein are for reference only.

Warranty Repair and Service

Do not return this product to the store for warranty issues or repair. Call our customer service department at **720-287-5182**, **1-877-487-8275**, or visit www.dirtyhandtools.com for the location of the nearest service center.

Record the information below for future reference.

Model No. _____

Serial No. _____

Date of Purchase _____

Place of Purchase _____

Specifications

SKU/Part No.	101487
Description	21" Snow Blower
Engine	212cc* DHT EPA/CARB Approved
Transmission	4 Forward, 1 Reverse Speeds
Fuel Type	Unleaded Gasoline, 87+ Octane
Fuel Capacity	0.95 Gallon (3.6 Liters)
Oil Capacity	1.27 Pints (0.6 Liters)
Starting System	Recoil
Spark Plug Gap	0.028" ~ 0.031"
Chute Rotation	Manual, 190° Turning Radius
Max. Throwing Distance	40 Feet
Working Width	21 inches
Intake Height	20 Inches
Dimensions	30"L x 23"W x 25"H
Weight	139 Lbs.
Shipping Weight	144 Lbs.
Accessories	Clean-Out Tool, Shear Pins
Warranty	2 Year Limited Warranty

*As rated by engine manufacturer

Dirty Hand Tools® is a brand of
 **FrictionlessWorld**
1100 W 120th Ave., Suite 600
Westminster, CO 80234 • 720-287-5182

For Service or Questions
Call 1-877-487-8275
720-287-5182
www.dirtyhandtools.com