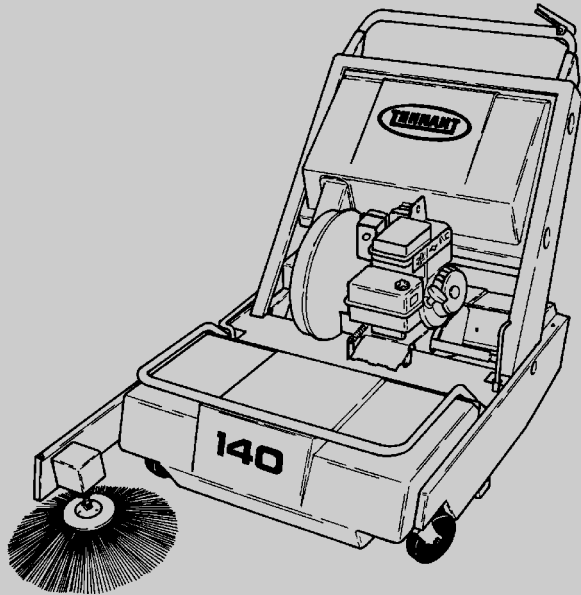




140

(Gas)

Sweeper Operator and Parts Manual



North America / International

www.tennantco.com

MM130
Rev. 22 (12-2006)





This manual is furnished with each new model. It provides necessary operation and maintenance instructions.

Read this manual completely and understand the machine before operating or servicing it.

This machine will provide excellent service. However, the best results will be obtained at minimum costs if:

- The machine is operated with reasonable care.
- The machine is maintained regularly - per the machine maintenance instructions provided.
- The machine is maintained with manufacturer supplied or equivalent parts.

	PROTECT THE ENVIRONMENT Please dispose of packaging materials, old machine components such as batteries, hazardous fluids such as antifreeze and oil, in an environmentally safe way according to local waste disposal regulations.
	Always remember to recycle.

MACHINE DATA	
Please fill out at time of installation for future reference.	
Model No. -	_____
Serial No. -	_____
Machine Options -	_____
Sales Rep. -	_____
Sales Rep. phone no. -	_____
Customer Number -	_____
Installation Date -	_____

Tennant Company
PO Box 1452
Minneapolis, MN 55440
Phone: (800) 553-8033 or (763) 513-2850
www.tennantco.com



CALIFORNIA PROPOSITION 65 WARNING:

Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Specifications and parts are subject to change without notice.

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SAFETY PRECAUTIONS

The following symbols are used throughout this manual as indicated in their descriptions:



WARNING: To warn of hazards or unsafe practices which could result in severe personal injury or death.

FOR SAFETY: To identify actions which must be followed for safe operation of equipment.

The following information signals potentially dangerous conditions to the operator or equipment. Read this manual carefully. Know when these conditions can exist. Locate all safety devices on the machine. Then, take necessary steps to train machine operating personnel. Report machine damage or faulty operation immediately. Do not use the machine if it is not in proper operating condition.

FOR SAFETY:

1. **Do Not Operate Machine:**
 - Unless Trained And Authorized.
 - Unless Operation Manual Is Read And Understood.
 - In Flammable Or Explosive Areas Unless Designed For Use In Those Areas.
 - In Areas With Possible Falling Objects Unless Equipped With Overhead Guard.
2. **Before Starting Machine:**
 - Check For Fuel Leaks.
 - Keep Sparks And Open Flame Away From Refueling Area.
 - Make Sure All Safety Devices Are In Place And Operate Properly.
3. **When Using Machine:**
 - Go Slow On Grades And Slippery Surfaces.
 - Use Care When Backing Machine.
 - Do Not Carry Riders On Machine.
 - Always Follow Safety And Traffic Rules.
4. **Before Leaving Or Servicing Machine:**
 - Stop On Level Surface.
 - Turn Off Machine And Remove Key.

5. **When Servicing Machine:**

- Avoid Moving Parts. Do Not Wear Loose Jackets, Shirts, Or Sleeves When Working On Machine.
- Block Machine Tires Before Jacking Machine Up.
- Jack Machine Up At Designated Locations Only. Block Machine Up With Jack Stands.
- Use Hoist Or Jack That Will Support The Weight Of The Machine.
- Wear Eye And Ear Protection When Using Pressurized Air Or Water.
- Disconnect Battery Connections Before Working On Machine.
- Avoid Contact With Battery Acid.
- Allow Engine To Cool.
- Keep Flames And Sparks Away From Fuel System Service Area. Keep Area Well Ventilated.
- Use TENNANT Supplied Or Equivalent Replacement Parts.

6. **When Loading/Unloading Machine Onto/Off Truck Or Trailer:**

- Turn Off Machine.
- Use Truck Or Trailer That Will Support The Weight Of The Machine.
- Use Winch. Do Not Push The Machine Onto/Off The Truck Or Trailer Unless The Load Height Is 380 mm (15 in) Or Less From The Ground.
- Block Machine Tires.
- Tie Machine Down To Truck Or Trailer.



WARNING: Engine Emits Toxic Gases. Severe Respiratory Damage Or Asphyxiation Can Result. Provide Adequate Ventilation. Consult With Your Regulatory Agency For Exposure Limits. Keep Engine Properly Tuned.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.



WARNING: Machine Moves When Motor Is Running. Stop Motor Before Leaving Machine.

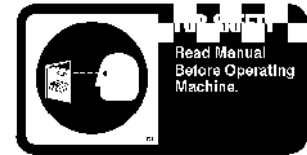
GENERAL INFORMATION

The following safety labels are mounted on the machine in the locations indicated. If these or any label becomes damaged or illegible, install a new label in its place.

TOXIC GASES WARNING LABEL - LOCATED ON MACHINE HANDLE FRAME.



FOR SAFETY LABEL - LOCATED ON MACHINE HANDLE FRAME.



MACHINE CREEPING WARNING LABEL - LOCATED ON MACHINE HANDLE FRAME.



02671



FLYING DEBRIS WARNING LABEL - LOCATED ON TOP OF HOPPER.

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MACHINE SPECIFICATIONS**POWER TYPE**

For machines serial number below 9271:

Engine type - piston
Ignition - breaker-type spark
Cycle - 4
Aspiration - natural
Cylinders - 1
Bore - 2.78 in (70 mm)
Stroke - 1.87 in (45 mm)
Displacement - 11.4 cu in (190 cc)
Net power - 3.1 hp (2.3 kw) @ 2700 rpm
governed
4 hp (3 kw) @ 3600 rpm maximum

For machines serial number 9271 and above:

Engine type - piston
Ignition - breaker-type spark
Cycle - 4
Aspiration - natural
Cylinders - 1
Bore - 2.38 in (60 mm)
Stroke - 1.75 in (45 mm)
Displacement - 7.75 cu in (127 cc)
Net power - 2.3 hp (1.7 kw) @ 2700 rpm
governed
3.5 hp (2.6 kw) @ 3600 rpm maximum

Fuel - gasoline, 77 octane, leaded or unleaded
Cooling system - air

POWER TRAIN

Propelling - limited slip belt driven
Main brush - belt driven
Side brush option - belt driven

SUSPENSION SYSTEM

Front (2) - 4 x 1.37 caster wheels
Rear - 8 x 2 solid tire

SYSTEM FLUID CAPACITIES

Fuel tank - 2 qt. (1.9L)
Engine lubricating oil - 1.25 pt (0.6L)

**GENERAL MACHINE
DIMENSIONS/CAPACITIES**

Length - 52 in (1320 mm)
62 in (1575 mm) with side brush
Width - 32 in (815 mm)
34.5 in (880 mm) with side brush
Height - 40.25 in (1020 mm)
Track - 29.75 in (755 mm)
Wheelbase - 26.5 in (675 mm)
Main brush diameter - 8 in (205 mm)
Main brush length - 28.6 in (725 mm)
Side brush diameter - 16 in (405 mm)
Sweeping path width - 29 in (735 mm)
37 in (940 mm) with side brush
Hopper capacity - 2.6 cu ft (0.07 m³)
Dust filter area - 49 sq ft (4.5 m²)

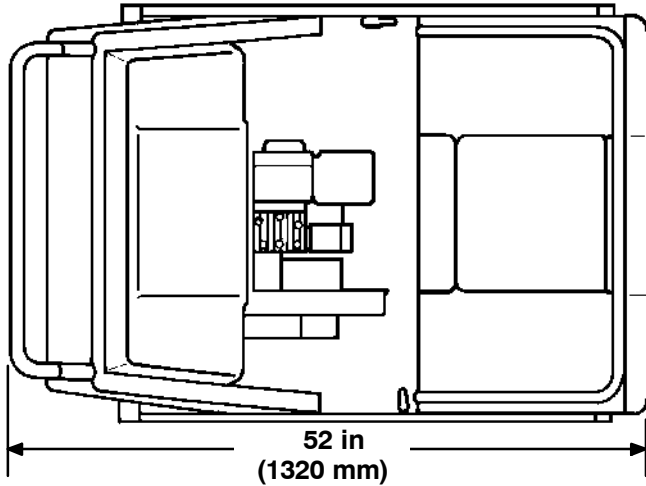
MACHINE WEIGHTS

Standard net weight, dry - 185 lb (84 kg)
GVWR - 310 lb (141 kg)

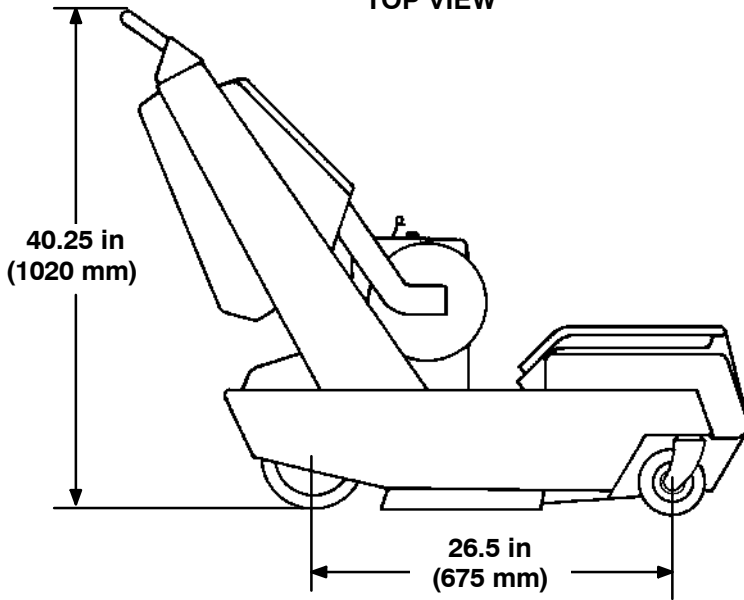
GENERAL MACHINE PERFORMANCE

Maximum travel speed - 3 mph (4.8 km/h)
Turning radius - 56 in (1420 mm)

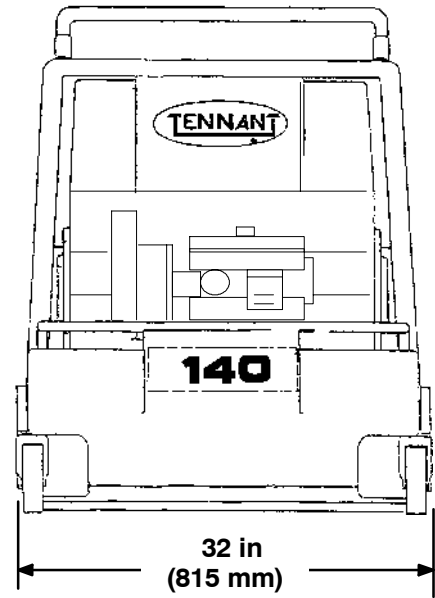
MACHINE DIMENSIONS



TOP VIEW



SIDE VIEW



FRONT VIEW

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PREPARATION FOR OPERATION

AFTER UNCRATING AND BEFORE
OPERATING THE MACHINE:

1. Check the machine for shipping damage. Report any damage to the carrier at once.
2. Read this manual carefully before operating or servicing this machine.

FOR SAFETY: Do Not Operate Machine, Unless Operation Manual Is Read And Understood.

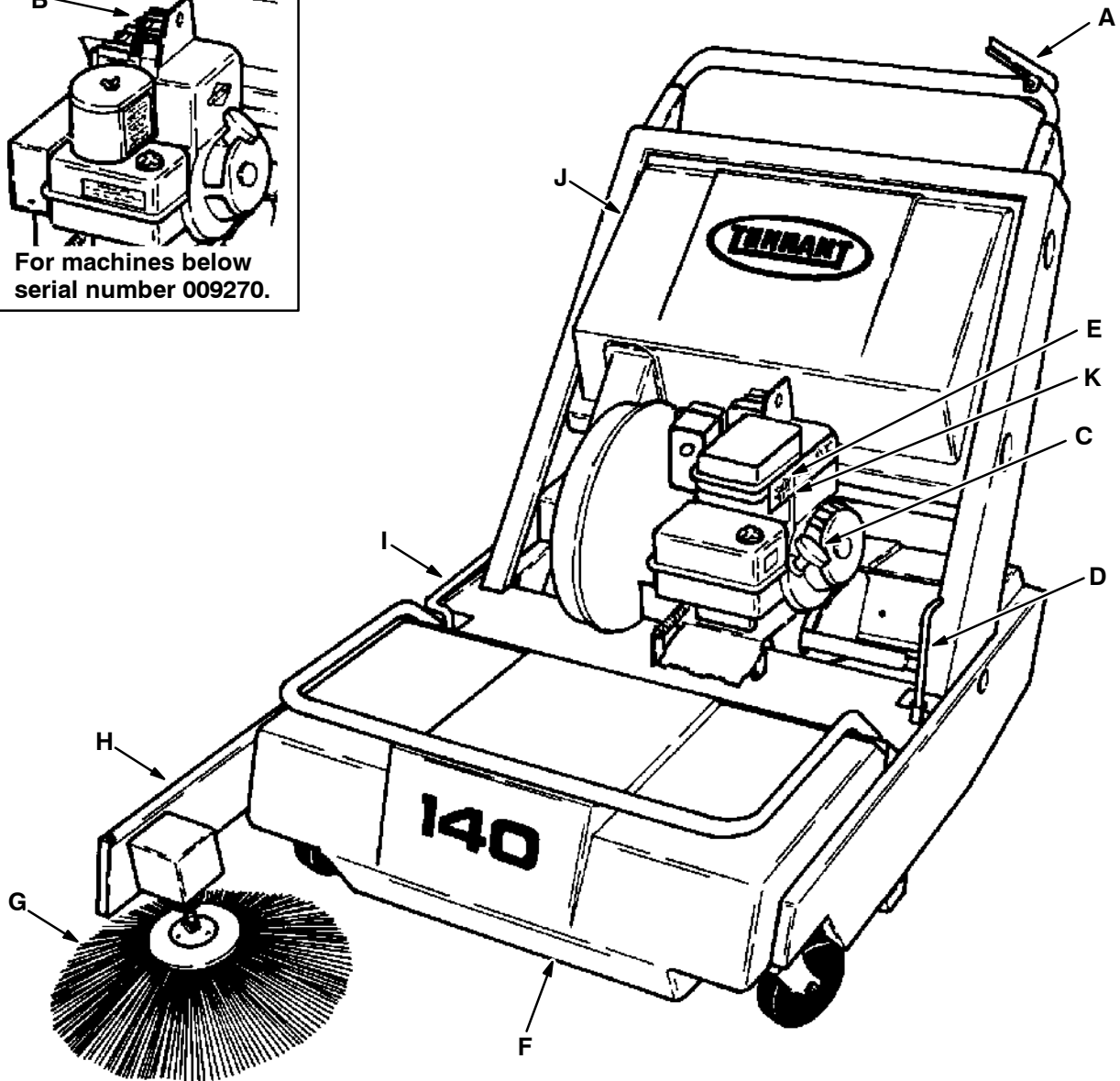
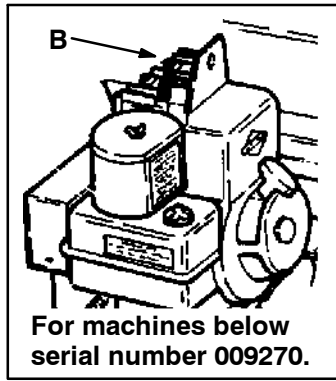
3. Check the engine oil level. Fill if necessary with appropriate oil. See *ENGINE LUBRICATION* in the *MAINTENANCE* section.
4. Make sure the air filter is securely mounted on the carburetor.

5. Fill the fuel tank with unleaded gasoline.

FOR SAFETY: When Servicing Machine, Keep Flames And Sparks Away From Fuel System Service Area. Keep Area Well Ventilated.

6. Install the brushes as described in *BRUSHES* in the *MAINTENANCE* section.
7. Check the brush pattern(s) as described in *BRUSHES* in the *MAINTENANCE* section.

OPERATION OF CONTROLS



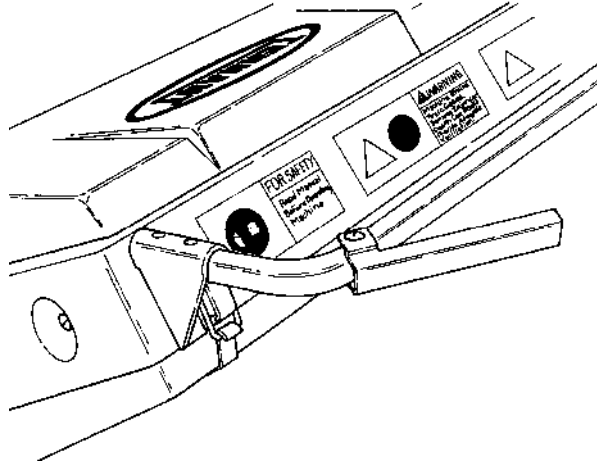
MACHINE COMPONENTS

02671

- | | |
|---------------------------|-----------------------------|
| A. Clutch Control Handle | G. Side Brush |
| B. Ignition Shorting Clip | H. Side Brush Arm |
| C. Engine Starter Cord | I. Main Brush Removal Lever |
| D. Main Brush Lift Handle | J. Dust Filter Enclosure |
| E. Engine Choke | K. Engine Throttle Lever |
| F. Hopper | |

CLUTCH CONTROL HANDLE

The clutch control handle operates a cable which controls the drive belt idler. To propel the machine forward, press the control handle-engaging the drive belt. To stop the machine, release the control handle-disengaging the drive belt.



CLUTCH CONTROL HANDLE

01190

MAIN BRUSH LIFT HANDLE

The main brush lift handle operates a linkage which controls the height of the main brush.

To lower the main brush, pull the handle up, back and release into the “lower” position.

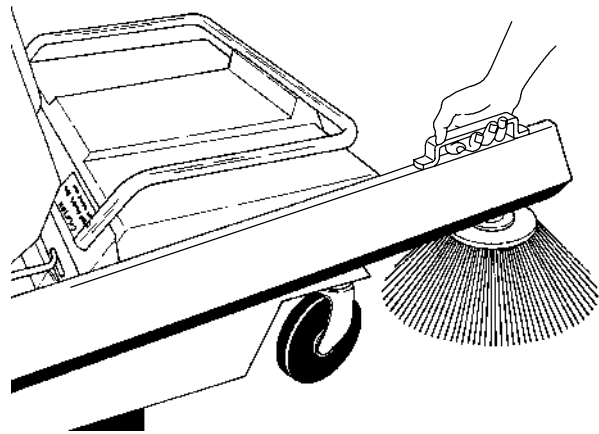
To raise the main brush, pull the handle up and forward into the “raised” position.

SIDE BRUSH

The side brush option gives the machine the added flexibility of sweeping along walls and under edges of tables, desks, etc. It is belt driven.

To lower the side brush and start side brush rotation, pull the side brush arm up, forward and down into the “operating” position–this engages the drive belt.

To raise and stop side brush rotation, pull the side brush arm up and back into the “raised” position–this disengages the drive belt.



RAISING SIDE BRUSH

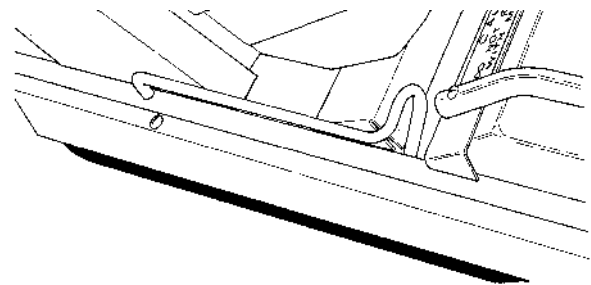
01195

MAIN BRUSH REMOVAL LEVER

The main brush removal lever controls the main brush spring arm idler plug position. The spring arm secures the main brush in the idler plug.

To remove the main brush, lift and pull the lever away from the machine. This disengages the main brush idler plug from the main brush.

To install and secure the main brush in the machine, align the brush slots and idler keys and swing the lever toward the machine, locking it on the machine frame. See *MAIN BRUSH* in the *MAINTENANCE* section.



MAIN BRUSH REMOVAL LEVER

01193

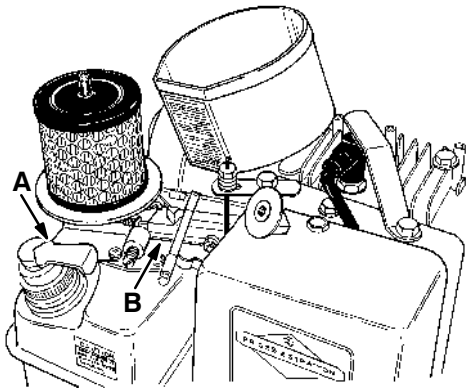
ENGINE STARTER CORD

The engine starter cord engages the ratchet starter to the engine flywheel. To start the engine, engage the engine choke, if the engine is cold, and pull the starter cord.

OPERATION

ENGINE CHOKE

The engine choke is located on the carburetor and aids starting cold engines on machines below serial number 009271, in this serial number set. To engage the choke on earlier machines, pull the choke knob out into the “closed” position. To engage the choke on later machines in this serial number set, rotate the choke lever away from the engine into the “closed” position. After the engine has warmed, return the choke knob or lever to its “open” position.

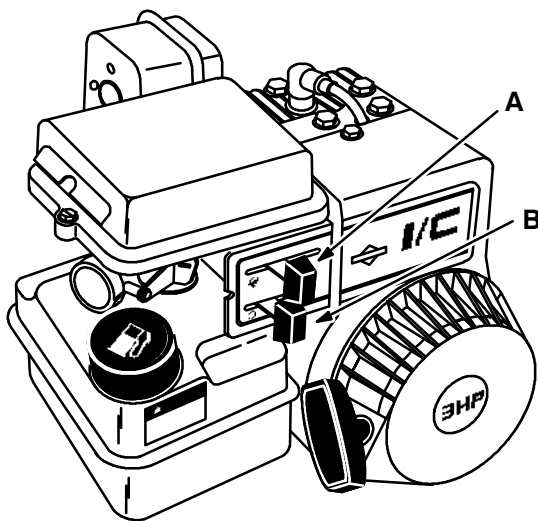


ENGINE CHOKE

02673

- A. Choke Lever
- B. Carburetor

The engine choke is located next to the fuel tank on machines with serial number 009271 and above. To engage the choke, push the lever back into the “closed” position. After the engine has warmed, pull the lever forward into the “open” position.



ENGINE THROTTLE AND CHOKE LEVERS

06201

- A. Choke Lever
- B. Throttle Lever

ENGINE THROTTLE LEVER

The engine throttle lever controls engine speed on machines with serial number 009271 and above. To speed the engine to the normal speed, push the lever back. To slow the engine to idle, pull the lever forward. To stop the engine, pull the lever all the way forward.

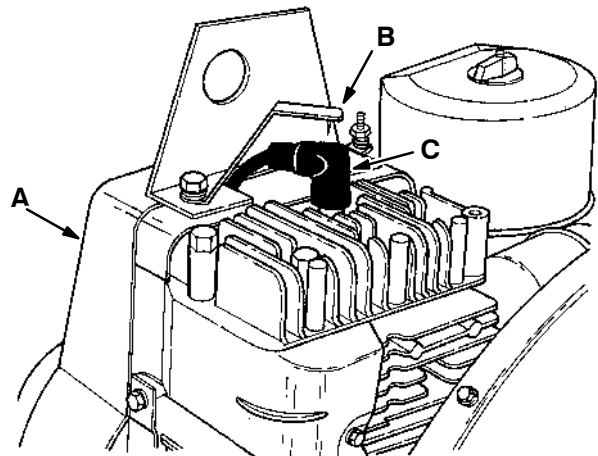
IGNITION SHORTING CLIP

The ignition shorting clip is located next to the engine spark plug on machines below serial number 009271. It is used to short the electrical current away from the engine spark plug to stop the engine.

To stop the engine, push the shorting clip onto the spark plug-release until the engine has stopped.



WARNING: Machine Moves When Motor Is Running. Stop Motor Before Leaving Machine.



IGNITION SHORTING CLIP

02672

- A. Engine
- B. Shorting Clip
- C. Spark Plug

MACHINE OPERATION

NORMAL SWEEPING OPERATION

A normal sweeping operation consists of seven typical operations: pre-start checklist, starting machine, sweeping, dumping hopper, post operation checklist-engine operating, stopping machine, and post operation checklist-engine stopped.

THE PRE-START CHECKLIST lists things to check before starting the machine.

TO START MACHINE lists the steps required to start the machine.

TO SWEEP lists things to keep in mind before and during the sweeping operation.

TO DUMP HOPPER lists the steps required to dump the hopper.

POST OPERATION CHECKLIST - Engine Operating lists things to check before stopping the machine engine.

TO STOP MACHINE lists the steps required to stop the machine.

POST OPERATION CHECKLIST - Engine Stopped lists things to check after stopping the machine engine.

PRE-START CHECKLIST

Check under machine for leak spots.

Check engine lubricating oil level.

Check fuel level.

Check controls for proper operation.

Check service records to determine service requirements.

FOR SAFETY: Before Starting Machine; Check For Fuel Leaks, Keep Sparks And Open Flame Away From Refueling Area, And Make Sure All Safety Devices Are In Place And Operate Properly.

TO START MACHINE

NOTE: Before starting machine, perform the pre-start checks.

1. Close the choke if the engine is cold.
2. Pull the engine starter cord to start the engine.
3. Drive the machine to the area to be cleaned.

TO SWEEP

Plan the sweeping in advance. Try to arrange long runs with minimum stopping and starting. Sweep debris from very narrow aisles into main aisles ahead of time. Do an entire floor or section at one time. Overlap brush paths.

Pick up oversize debris before sweeping. Flatten or remove bulky cartons from aisles before sweeping. Pick up pieces of wire, twine, string, etc., which could become entangled in brush or brush plugs.

Press the clutch handle to place the machine in motion. Release the clutch handle for easier turning. Sweep as straight a path as possible. Avoid bumping into posts or scraping the sides of the sweeper. Empty the debris hopper when it becomes full.

1. Place the main brush lift handle in the "lower" position.
2. Pull the side brush arm up, forward and down into the "operating" position if present.
3. Sweep as required.

NOTE: Do not allow the machine to remain stationary with machine operating and the main brush in the "lower" position as it may cause wear marks on the floor.

OPERATION

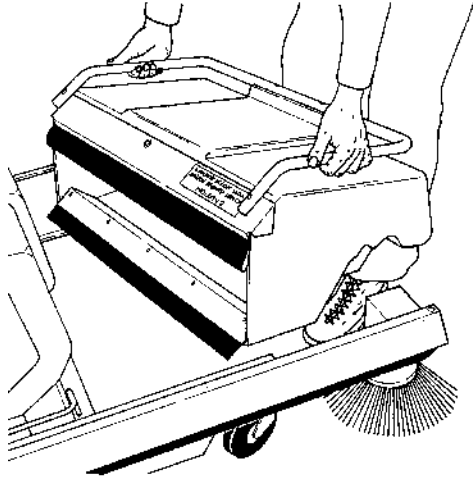
TO DUMP HOPPER

1. Stop the engine.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Grasp the hopper handles with both hands.
3. Lift and swing the hopper upward to remove the hopper from the machine.



REMOVING HOPPER

01196

4. Dump the debris out of the hopper into suitable refuse container.
5. Tip the hopper down and slide it into place on the machine.

POST OPERATION CHECKLIST - ENGINE OPERATING

Check brush patterns for width and evenness.

TO STOP MACHINE

1. When finished sweeping, place the main brush lift handle and the side brush arm in the "raise" position.
2. Stop the engine by holding the ignition shorting clip on the spark plug.

POST OPERATION CHECKLIST - ENGINE STOPPED

Check skirts for damage, wear, and adjustment.

Check for wire or string tangled on brushes.

Check for leaks.

MACHINE TROUBLESHOOTING

Problem	Cause	Remedy
Poor sweeping performance	Main brush worn out	Replace main brush
	Main brush not properly adjusted	Adjust main brush lift handle to obtain correct brush pattern
	Main brush not level with floor	Adjust brush pattern
	Hopper full	Empty hopper
	Dust filter clogged	Remove and clean dust filter
	Brush jammed with debris	Remove debris
	Hopper lip or dust skirt not properly adjusted	Adjust hopper lip or dust skirt
	Brush drive belts slipping or broken	Adjust or replace belts
Dusting	Dust filter clogged	Remove and clean filter
	Filter not seated correctly against its seals	Remove and reinstall filter
	Dust filter damaged	Replace dust filter
	Hopper full	Empty hopper
	Clogged ducts	Clean ducts
	Ducts not engaging seals or seals damaged	Adjust or replace seals
	Dust skirts not properly adjusted or are damaged	Adjust or replace dust skirts
	Vacuum fan not operating	Fan drive sheave or impeller key is broken. Check drive belt
Brush pattern not even	Main brush not lowering evenly due to debris jam	Remove main brush and debris
	Bail arm not level	Adjust arm position
	Main brush spring arm may be out of adjustment	Adjust arm position
	Main brush not seated correctly on drive cups	Remove and reinstall main brush
Machine will not travel	Flat belt broken	Replace belt
	Oil on flat belt or shaft	Clean belt and sheaves
	Clutch shaft arm loose or out of adjustment	Adjust arm
	Clutch cable broken or out of adjustment	Replace or adjust cable
	Rear drive wheel jammed	Free wheel

OPERATION

Problem	Cause	Remedy
Excessive belt wear or breakage	Engine drive belt broken or slipping	Replace or adjust belt
	Belt is over-tensioned or under-tensioned, causing slippage	Adjust belt tension
	Belt sheaves have moved out of adjustment	Align sheaves
	Belt or sheaves have dirt or oil on them	Clean sheaves and belt
Engine will not start, or hard to start	Shorting clip in "stop" position	Set clip in "run" position
	Faulty ignition	Check spark plugs, points
	Faulty carburetion	Check fuel level, clogged fuel lines, incorrectly adjusted carburetor
	Low compression	Cylinder head loose, head gasket leaking, worn piston rings and valves
Engine overheating	Air filter clogged	Clean or replace
	Cooling fins clogged	Clean
	Low oil level	Add oil to "full" level
	Faulty carburetion	Adjust fuel mixture

MACHINE STORAGE**STORING MACHINE**

When storing the machine for extended periods of time, the following procedures must be followed to lessen the chance of rust, sludge, and other deposits from forming:

1. Place the main brush and side brush, if so equipped, in the “raise” position.
2. Empty and clean the debris hopper.
3. Drain the fuel system. Operate the engine until it stops from lack of fuel.
4. Change the engine oil.
5. Remove the spark plug, pour 1 oz (30 cc) of engine oil into the cylinder, and slowly rotate the engine crankshaft to distribute the oil. Replace the spark plug.
6. Clean engine cooling fins.
7. Store the machine in a clean and dry area.

SECTION 3

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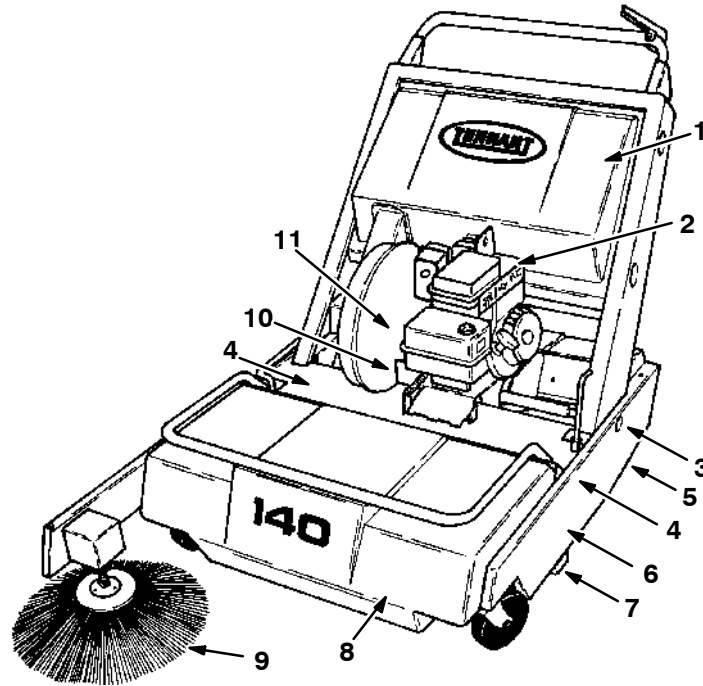
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RECOMMENDED FIRST 5-HOUR MACHINE INSPECTION

After the first 5 hours of operation, perform the following procedures:

1. Change the engine oil.
2. Check the floor skirts to floor clearance.
3. Check the main brush and side brush, if so equipped, brush patterns.

MAINTENANCE CHART



02671

Interval	Key	Description	Procedure	Lubricant/ Fluid	No. of Service Points
Daily	2	Engine	Check oil level	EO	1
	4	Main brush	Check for wear or damage	-	1
	9	Side brush	Check for wear or damage	-	1
	1	Dust filter	Shake clean	-	1
20 hours or weekly	2	Engine	Clean air filter	-	1
			Change oil	EO	1
	4	Main brush	Rotate end-for-end and check brush pattern	-	1
	9	Side brush	Check brush pattern	-	1
80 hours or 4 weeks	2	Engine	Clean or replace and gap spark plug	-	1
	8	Debris hopper	Check floor clearance adjustment	-	1
	1	Dust filter	Clean	-	1
	6	Side dust skirts	Check for wear or damage and adjustment	-	2
	7	Hopper side seals	Check for wear or damage	-	2
	5	Rear brush skirt	Check for wear or damage	-	1
160 hours or 8 weeks	10	Drive belts	Check for wear or damage and adjustment	-	1
	11	Static drag chain	Check for wear and floor contact	-	1
	3	Rear guide wheels	Check floor clearance adjustment	-	2

EO - Engine Oil

NOTE: More frequent intervals may be required in extremely dusty conditions.

ENGINE

ENGINE LUBRICATION

Check the engine oil level daily. Change the engine oil after the first 5 hours of operation and then after every 20 hours of operation.

Use a high quality SAE-SE rated engine oil. The following oil grades are general recommendations for engines during the changing seasonal temperatures.

Below 10°F (Below -12°C)	10° to 50°F (-12° to 10°C)	Above 50° (Above 10°C)
5W-20	10W-30	30
5W-30	10W-40	10W-30
		10W-40

The engine oil capacity is 1.25 pt (0.6 L).

COOLING SYSTEM

Maintaining cooling system efficiency is important. Engine temperatures must be brought up to and maintained within the satisfactory range for efficient operation. However, the engine must be kept from overheating in order to prevent damage to the valves, pistons, and bearings.

Remove the blower housing and clean the engine cooling fins with compressed air after every 160 hours of operation. Replace the blower housing after cleaning the cooling fins. The housing directs the cooling air around the cooling fins and must be replaced.

AIR INTAKE SYSTEM

The importance of maintaining an air filter in proper condition cannot be overemphasized. Dirt induced through improperly installed, improperly serviced, or inadequate air filter elements wears out more engines than long hours of operation. Even a small amount of dirt will wear out a set of piston rings in just a few hours. Operating with a clogged air filter element also causes the fuel mixture to be richer, which can lead to formation of harmful sludge deposits in the engine. Always cover the air intake when the air cleaner is removed for servicing. Do not neglect servicing the air cleaner. Use only correct parts for replacement. Keep all other air intake components such as hoses, clamps, etc., secure and in good condition to prevent entrance of unfiltered air.

AIR FILTER

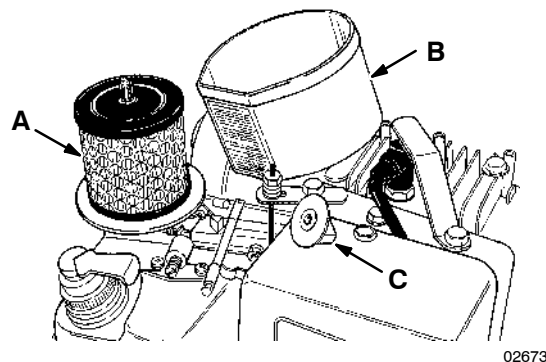
The engine air filter element on earlier machines is an oil-bath type air filter. The air filter element must be cleaned and recoiled after every 20 hours of operation. The engine air filter element on later machines is a dry-type cartridge filter. The air filter element must be cleaned or replaced after every 20 hours of operation. Clean the element more frequently under extremely dusty conditions.

TO CLEAN AIR FILTER ELEMENT

1. Stop the engine and disconnect the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Remove the air filter retention nut.
3. Open the air filter cover and remove the air filter element.



AIR FILTER (TYPICAL)

- A. Air Filter Element**
- B. Filter Cover**
- C. Retention Nut**

4. Clean the air filter element. Use kerosene or liquid detergent to clean foam elements. Wrap the element in a cloth and squeeze dry. Tap or use compressed air to clean dry-type elements.
5. Reposition the air filter element in the air filter body.
6. Replace the filter cover.
7. Secure the air filter assembly to the engine with the filter retention nut.

MAINTENANCE

FUEL SYSTEM

FUEL TANK

Fill the fuel tank at the end of each day's operation to prevent condensation from forming in the fuel tank.

The tank has a capacity of 2 qt (1.9 L).

CARBURETOR CHOKE

The manually operated carburetor choke is located on the end of the carburetor. Use the choke to start cold engines.

Do not leave the choke in the "closed" position when the engine is warm.

CARBURETOR

The carburetor needs no regular maintenance. It is set so there is no idle speed – only the normal operating speed. It can be adjusted as follows:

Initial Adjustment – Turn needle valve clockwise to close it. Then open one and one-half turns. This initial adjustment will allow the engine to be started and warmed up before making a final adjustment.

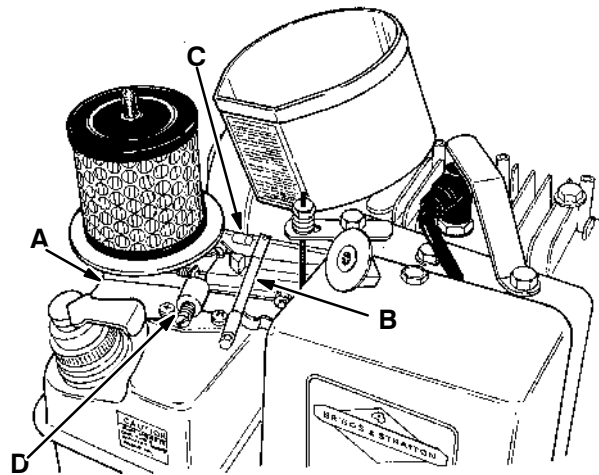
Final Adjustment – With engine running at normal operating speed, 2700 rpm, turn needle valve clockwise until engine starts to lose speed because of a lean mixture.

Then slowly turn needle valve counter-clockwise past the point of smoothest operation, until engine just begins to run unevenly. This mixture will give best performance under load.

Test engine under full load. If engine tends to stall or die out, it usually indicates that the mixture is slightly lean and it may be necessary to open the needle valve slightly to provide a richer mixture.

To increase engine speed, bend the governor tong to increase the governor spring tension.

To decrease engine speed, bend the governor tong to decrease the governor spring tension.



CARBURETOR (TYPICAL)

02673

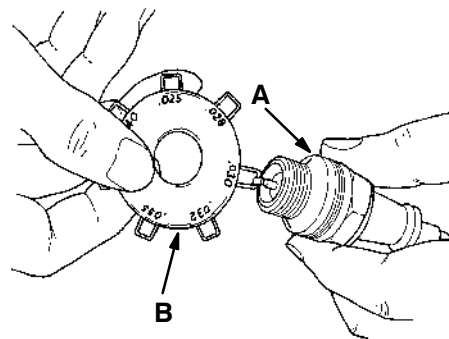
- A. Carburetor**
- B. Governor Tong**
- C. Governor Spring**
- D. Mixture Needle Valve**

IGNITION SYSTEM

SPARK PLUG

Spark plug gaps are best checked with a wire gauge unless the points are dressed to obtain a correct reading with a flat gauge. The adjustment should always be made on the side electrode and never on the center electrode, which may cause the porcelain to be broken.

"Gapping" the electrode tip is more easily done with the proper tools.



GAPPING THE SPARK PLUG

01808

- A. Spark Plug**
- B. Gapping Tool**

Clean or replace and gap the spark plug after every 80 hours of operation.

The proper spark plug gap is 0.030 in (0.8 mm).

IGNITION SYSTEM

The engine ignition system on machines with serial numbers up through 4821 consists of a set of breaker points, condenser, armature coil, and flywheel. This ignition system should be checked on a yearly basis.

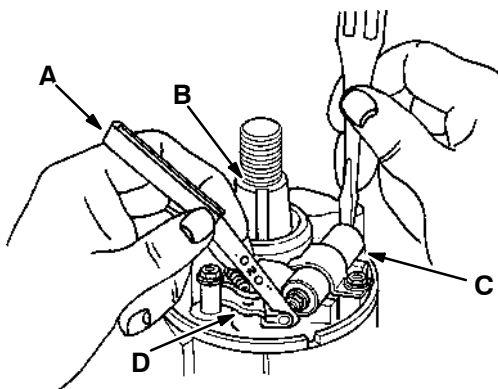
The engine ignition system on machines with serial numbers 4822 and above consists of the Magnatron™ ignition. This ignition system needs no regular inspection. The flywheel does not have to be removed to service the Magnatron™ module as it is mounted on the armature. To time engine, position armature bracket so its three mounting screws are centered in the mounting slots.

TO CHECK AND ADJUST STANDARD IGNITION SYSTEM

1. Stop the engine and let it cool. Remove the spark plug wire.

FOR SAFETY: When Servicing Machine, Allow Engine To Cool.

2. Remove the blower housing, flywheel, armature, and breaker cover.
3. Turn the crankshaft until the breaker points open to their widest gap. Check the condition of the breaker contacts. Clean or replace breaker points.
4. Check the gap width. It should be 0.020 in (0.5 mm). To adjust the gap, move the condenser forward or backward with a screw driver.

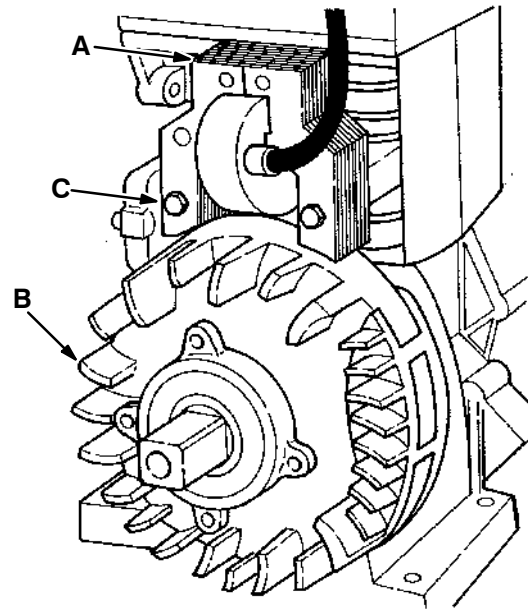


ADJUSTING BREAKER POINT GAP

- A. Gauge**
- B. Crankshaft Keyway**
- C. Condenser**
- D. Breaker Points**

01789

5. Open the breaker points and position a piece of lintless paper between the contacts. Pull the paper through the contacts. Open the contacts to remove the paper so no paper remnants will remain.
6. Replace breaker cover. Apply sealant to the wire opening in the cover.
7. Replace the flywheel. Torque the flywheel nut to 55 ft lb (75 Nm).
8. Position the armature up as far as possible and tighten one screw to hold the armature in place.



ENGINE ARMATURE

01790

- A. Armature**
- B. Flywheel**
- C. Armature Screw**

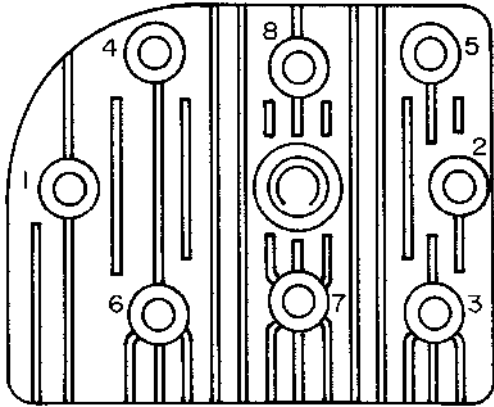
9. Turn the flywheel until magnets are directly below the armature. Position a 0.006 to 0.010 in (0.15 to 0.25 mm) gauge between the armature and the flywheel. Loosen the one armature screw. The magnet should draw the armature against the gauge. Thread in and tighten the armature screws. Remove the gauge.
10. Replace the blower housing and spark plug wire.
11. Start the engine and check for proper operation.

MAINTENANCE

CYLINDER HEAD

CYLINDER HEAD

The cylinder head may develop carbon deposits. Remove the cylinder head and clean the head of any accumulated deposits after every 160 hours of operation. Replace the cylinder head, making sure the cylinder head screws are lubricated with graphite grease and are returned to the same hole. Alternately snug the screws; tighten them to one-half of the specified value; then torque the screws to 130 to 150 in lb (15 to 17 Nm).



02675

CYLINDER HEAD SCREW TIGHTENING SEQUENCE

VALVE TAPPET CLEARANCE

The valve tappet clearance requires no regular adjustment. The intake valve clearance should be 0.005 to 0.007 in (0.13 to 0.18 mm) cold. The exhaust valve clearance should be 0.009 to 0.011 in (0.23 to 0.28 mm) cold. Grind off the end of the valve stem to obtain the proper clearance.

BRUSHES

MAIN BRUSH

The main brush is tubular and spans the width of the machine. It sweeps debris into the hopper. It should be inspected daily for wear or damage. Remove any string or wire found tangled on the main brush, main brush drive hub, or main brush idler hub.

The main brush pattern should be checked after every 20 hours of operation. The main brush pattern should be approximately 1.5 in (40 mm) wide when sweeping hard floors and 0.5 in (15 mm) when sweeping carpeted floors. Check the main brush pattern only on hard floors with the main brush in the lowered position. Main brush pattern adjustments are made by rotating the main brush lift handle. Use the carpet brush on carpets for better performance and brush life.

Rotate the brush after every 20 hours of operation for maximum brush life.

The main brush should be replaced when the remaining brush bristle measures 1.25 in (30 mm).

TO REMOVE MAIN BRUSH

1. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Lift the hopper up and out of the machine.

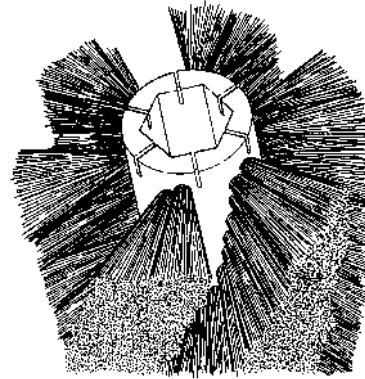


WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

3. Pull the main brush removal lever away from the machine to disengage the main brush idler plug from the main brush.
4. Grasp the main brush and pull it off the main brush drive plug and out of the main brush compartment.

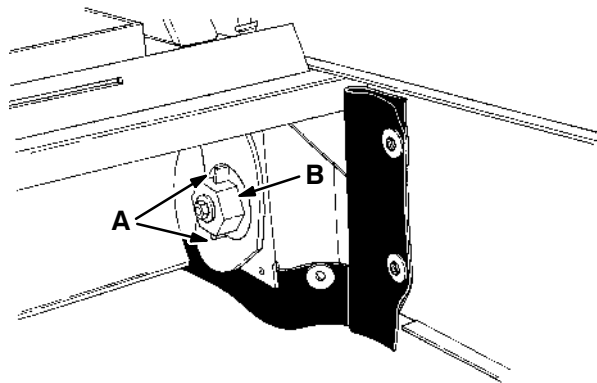
TO INSTALL MAIN BRUSH

1. Pull the main brush removal lever away from the machine.
2. Line up one of the slotted ends of the main brush with the drive plug drive keys.



MAIN BRUSH DRIVE SLOTS

01207

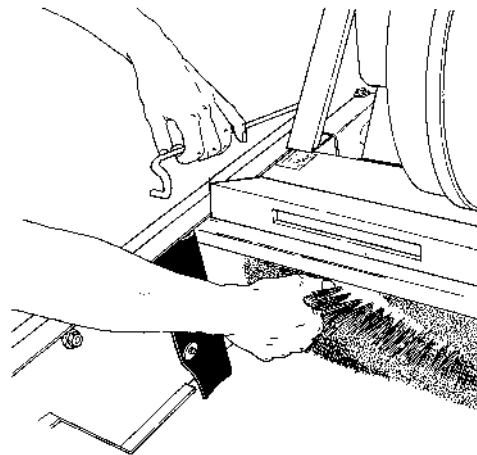


MAIN BRUSH DRIVE PLUG DRIVE KEYS

01208

- A. Drive Key
- B. Drive Plug

3. Fit one end of the main brush over the main brush drive plug.



INSTALLING MAIN BRUSH

01209

4. Position the other end of the main brush over the main brush idler plug.

MAINTENANCE

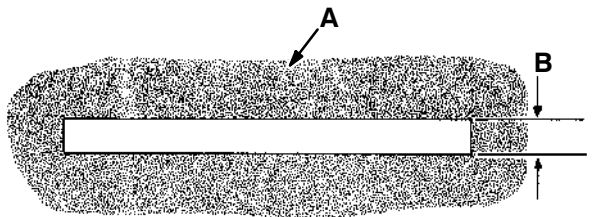
5. Push and lock the main brush removal lever into place on the machine frame to secure the main brush.
6. Check and adjust the main brush pattern as described in *TO CHECK AND ADJUST MAIN BRUSH PATTERN*.

TO CHECK AND ADJUST MAIN BRUSH PATTERN

1. Place the machine over a hard floor.
2. Start the engine.
3. Place the main brush lift handle in the "lower" position to lower the main brush to the floor for one minute while holding the machine in one place.
4. Pull the main brush lift handle up and forward to raise the main brush.
5. Move the machine away from the main brush polish mark.
6. Stop the engine.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

7. Observe the width of the polish mark. The proper polish width is 1.5 in (40 mm) for hard floors and 0.5 in (15 mm) for carpet floors.



00582

MAIN BRUSH PATTERN

- A. Main Brush Pattern**
- B. Polish Width**

If the polish mark width is too wide, turn the main brush lift handle clockwise to raise the brush.

If the polish mark width is too narrow, turn the main brush lift handle counterclockwise to lower the brush.

If any adjustments are made, recheck the main brush pattern before resuming work with the machine.

SIDE BRUSH

The side brush sweeps debris from walls or curbs into the path of the main brush. It should be inspected daily for wear or damage. Remove any string or wire found tangled on the side brush or side brush drive hub.

The side brush should be replaced when the remaining brush bristle measures 1 in (25 mm) in length.

The side brush adjustment should be checked after every 20 hours of operation. The side brush is properly adjusted when, with the side brush arm in the "raised" position, there is approximately 1 in (25 mm) of space between the floor and the side brush bristles.

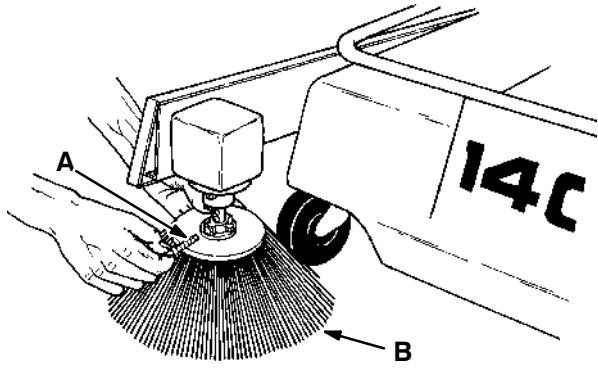
Side brush adjustments are made by mounting the side brush in a different one of the five mounting holes in the side brush drive shaft.

TO REMOVE SIDE BRUSH

1. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Pull the side brush arm up and back to raise the side brush.
3. Remove the side brush retaining bolt or hair cotter pin.



REMOVING SIDE BRUSH RETAINING BOLT

- A. Retaining Bolt**
- B. Side Brush**

4. Slide the side brush off the side brush drive shaft.

TO INSTALL SIDE BRUSH

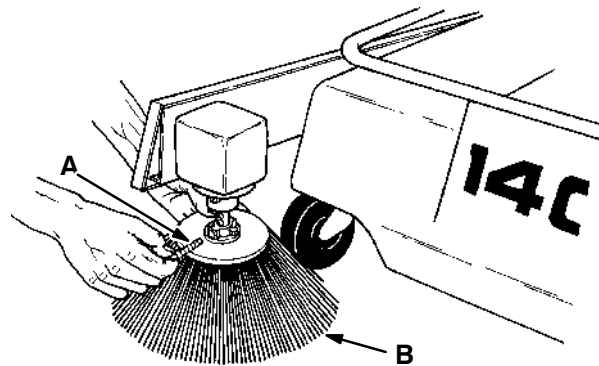
1. Slide the side brush onto the side brush drive shaft.
2. Fasten the side brush to the shaft with the retaining bolt or hair cotter pin.
3. Check the side brush adjustment as described in *TO ADJUST SIDE BRUSH*.

TO ADJUST SIDE BRUSH

1. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Pull the side brush arm up and back to put the side brush in the "raised" position.
3. Remove the side brush retaining bolt or hair cotter pin.
4. Slide the side brush up or down on the shaft until there is approximately 1 in (25 mm) of space between the floor and the side brush bristles.



ADJUSTING SIDE BRUSH HEIGHT

- A. Retaining Bolt**
- B. Side Brush**

5. Line up the side brush and drive shaft holes to allow the side brush to be nearest to the specified dimension.
6. Secure the side brush to the drive shaft with the retaining bolt or hair cotter pin.

DEBRIS HOPPER AND DUST FILTER

DEBRIS HOPPER

The machine debris hopper collects debris swept up by the main brush. It should be emptied after every work shift.

The hopper floor clearance should be checked and adjusted, if necessary, after every 80 hours of operation.

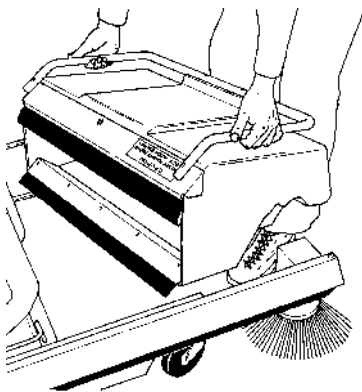
TO EMPTY HOPPER

1. Stop the engine.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Grasp the hopper handles with both hands.
3. Lift and swing the hopper upward to remove the hopper from the machine.



REMOVING HOPPER

01196

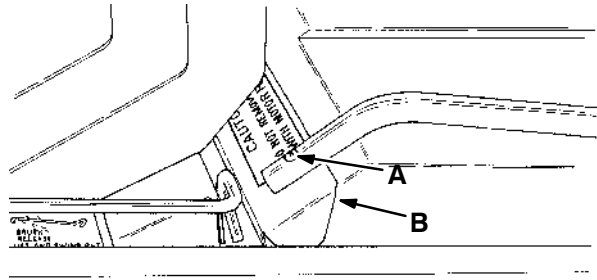
4. Dump the debris out of the hopper into suitable refuse container.
5. Tip the hopper down and slide it into place on the machine.

TO ADJUST HOPPER FLOOR CLEARANCE

1. Empty the hopper
2. Stop the machine on a smooth level floor.
3. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

4. Loosen the three hopper top seal retainer bolts on the hopper.



01210

HOPPER TOP SEAL RETAINER

- A. Retainer Bolt
- B. Hopper Top Seal Retainer

5. Place two 0.38 to 0.5 in (10 to 15 mm) blocks on the floor under the hopper wear plate.
6. Slide the hopper top seal retainer up or down so that the retainer just touches the machine frame.
7. Tighten the hopper top seal retainer bolts.
8. Remove the blocks from under the hopper wear plate.

REAR GUIDE WHEELS

The rear guide wheels prevent the rear of the machine from tipping. They are located just behind the main brush shroud. Check the floor clearance after every 160 hours of operation. They should clear the floor by 0.38 in (10 mm).

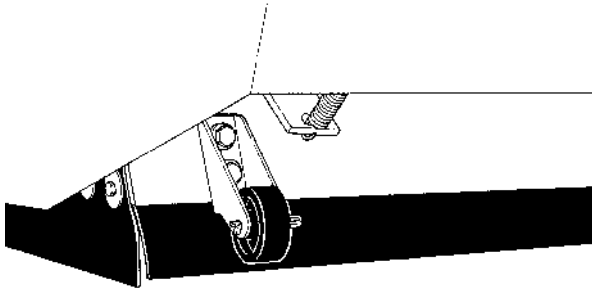
TO ADJUST REAR GUIDE WHEELS

1. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Loosen the two bolts holding each of the rear guide wheels in place.
3. Slide the guide wheels up or down so that they clear the floor by 0.38 in (10 mm).

4. Tighten the two bolts on each guide wheel.



REAR GUIDE WHEEL

01211

HOPPER DUST FILTER

The hopper dust filter is located inside the dust filter compartment. The dust filter filters the air which is drawn up from the main brush compartment. Shake the excess dust from the filter daily by rapping on the front filter housing. Clean the filter after every 80 hours of operation.

Use one of the following methods to clean the dust filter:

- Tapping - Tap the filter gently on a flat surface with the dirty side down. Do not damage the edges of the filter element or the filter will not seat properly in the filter frame.
- Air - Blow compressed air, 40 psi (275 kPa) maximum, through the dust filter opposite the direction of the arrows.
- Water - Soak the dust filter in a water and mild detergent solution. Rinse the dust filter until it is clean. The maximum water pressure allowable is 40 psi (275 kPa). Air dry the wet dust filter; do not use compressed air.

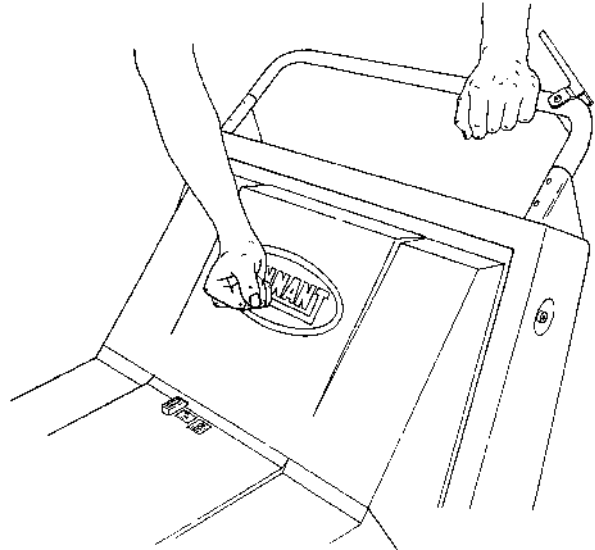
NOTE: Be sure the dust filter is dry before reinstalling it in the machine.

TO REMOVE DUST FILTER

1. Stop the engine and remove spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

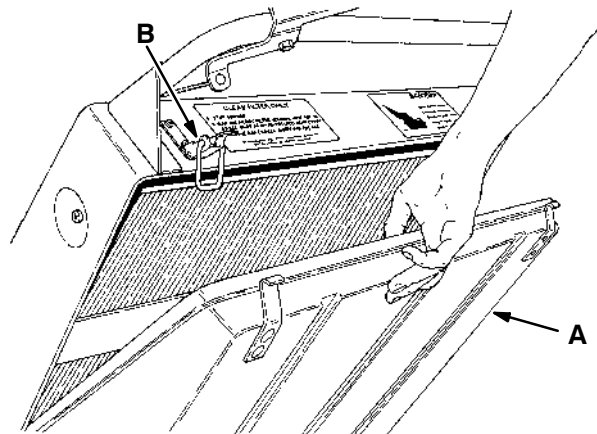
2. Rap on the front filter housing with a fist to shake the excess dust from the dust filter.



RAPPING FILTER HOUSING

01212

3. Unlatch the two filter cover latches and lower the rear filter cover.



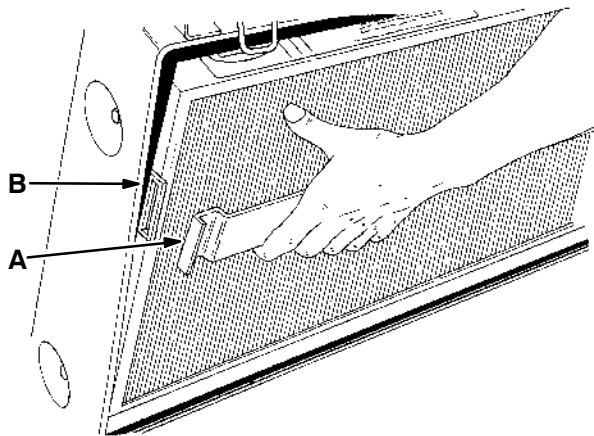
LOWERING REAR FILTER COVER

01214

- A. Rear Filter Cover
- B. Filter Cover Latch

MAINTENANCE

- Slide the filter retention bar up and out of the slotted retention brackets.



01215

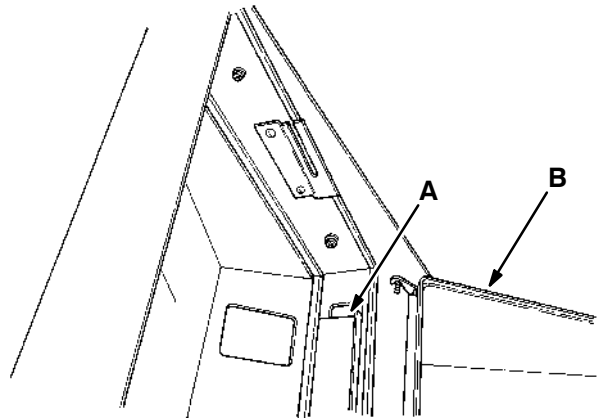
REMOVING FILTER RETENTION BAR

- A. Filter Retention Bar
- B. Retention Bracket

- Push the filter retention spring upward and slide the filter out of the filter compartment.

TO INSTALL DUST FILTER

- Push the filter retention spring upward and slide the filter into place on the filter base in the filter compartment.



01216

FILTER COMPARTMENT

- A. Filter Base
- B. Rear Filter Cover

NOTE: Make sure the arrows on the filter are pointing to the front of the machine.

- Release the filter retention spring.
- Slide the filter retention bar down into the slotted retention brackets.
- Lift the rear filter cover back into the "operating" position.
- Latch the two filter cover latches.

SKIRTS AND SEALS

SIDE DUST SKIRTS

A dust skirt is located on each side of the brush compartment. They control main brush dusting. The dust skirts should be inspected for wear or damage and adjustment after every 80 hours of operation.

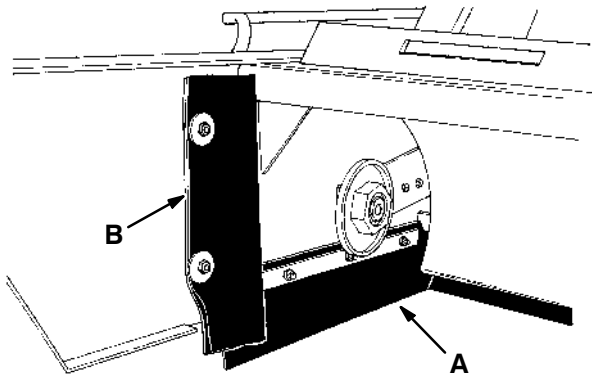
TO ADJUST SIDE DUST SKIRTS

1. Stop the engine and remove the spark plug wire.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

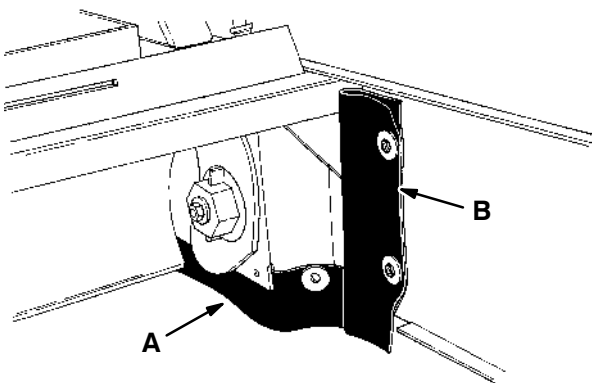
2. Grasp the hopper handles; lift and swing the hopper up and out of the machine.
3. Loosen the side dust skirts retaining bolts.



RIGHT SIDE DUST SKIRT

01217

- A. Side Dust Skirt
- B. Side Dust Seal



LEFT SIDE DUST SKIRT

01208

- A. Side Dust Skirt
- B. Side Dust Seal

4. Slide the side dust skirts up or down so there is 0.03 to 0.25 in (1 to 5 mm) clearance between the floor and the bottom of the skirt.
5. Tighten the skirt retaining bolts.
6. Reinstall the hopper.

TO REPLACE SIDE DUST SKIRTS

1. Stop the engine and remove the spark plug.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Grasp the hopper handles; lift and swing the hopper up and out of the machine.
3. Remove the retaining bolts and strips from the side dust skirts.
4. Remove the side dust skirts.
5. Position the new side dust skirts on the machine so there will be floor clearance of 0.03 to 0.25 in (1 to 5 mm).
6. Install and tighten retaining strips and bolts on skirts.
7. Reinstall the hopper.

MAINTENANCE

HOPPER SIDE SEALS

A seal is located on each side of the machine frame to seal the sides of the hopper. The seals should be checked for wear or damage after every 80 hours of operation.

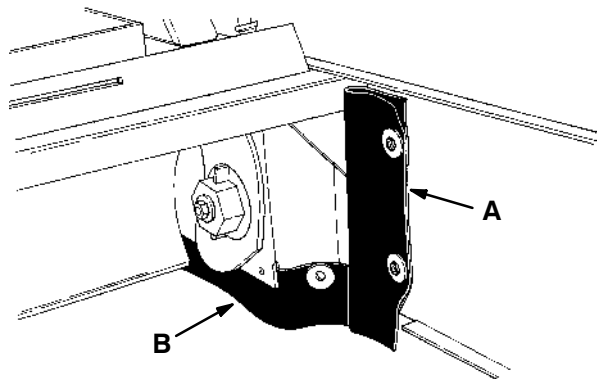
TO REPLACE HOPPER SIDE SEALS

1. Stop the engine and remove the spark plug wire.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Grasp the hopper handles; lift and swing the hopper up and out of the machine.
3. Remove the two side seal retaining bolts.



LEFT SIDE DUST SEAL

- A. Side Dust Seal
- B. Side Dust Skirt

4. Remove the side seal retaining strip and side seal.
5. Loop new side seal so the mounting holes line up.
6. Slide the retaining bolts through the retaining strip, the side seal, and into the machine.
7. Tighten the seal retaining bolts.

REAR BRUSH SKIRT

A dust skirt is located behind the main brush to control dusting. It should be checked for wear or damage after every 80 hours of operation.

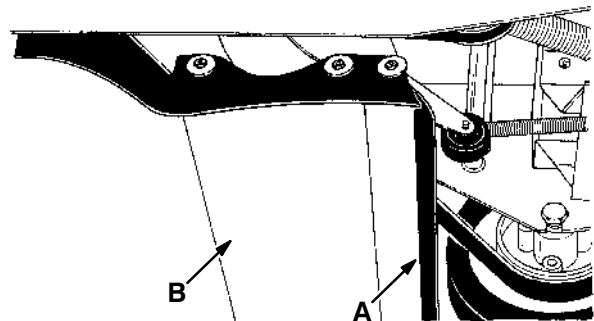
TO REPLACE REAR BRUSH SKIRT

1. Stop the engine and remove the spark plug wire.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Remove the debris hopper and battery cover.
3. Carefully tip the machine onto its side.
4. Remove the bottom bolts from each of the rear guide wheels.
5. Remove the single bolt between the two rear guide wheels.



REAR BRUSH SKIRT

- A. Rear Brush Skirt
- B. Brush Baffle

6. Pull the rear brush skirt and brush baffle out of the machine.
7. Position the new rear skirt and brush baffle on the machine.
8. Secure the rear skirt and brush baffle to the machine with the three bolts removed earlier.
9. Carefully tip the machine back into the "operating" position.
10. Replace the debris hopper.

BELTS AND CHAINS

FLAT PROPELLING BELT

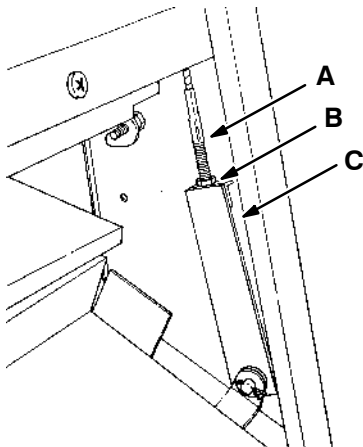
The flat propelling belt transfers power from the motor jackshaft to the drive wheel. Check the belt for wear after every 80 hours of operation. Check the belt tension after every 160 hours of operation.

TO CHECK AND ADJUST FLAT PROPELLING BELT

1. Start the engine.
2. Press the clutch handle. The machine should pull forward just before the clutch handle touches the machine stationary handle. If it does not, adjust as follows:
 - A. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

- B. Loosen the clutch cable jam nut.



CLUTCH CABLE ADJUSTMENT

01220

- A. Clutch Cable
- B. Jam Nut
- C. Clutch Cable Bracket
- C. Thread the clutch cable out of the cable bracket to relieve belt tension. Thread the clutch cable into the cable bracket to tighten belt tension.
- D. Tighten the clutch cable jam nut to the cable bracket.
- E. Check the flat propelling belt tension, and readjust as necessary.

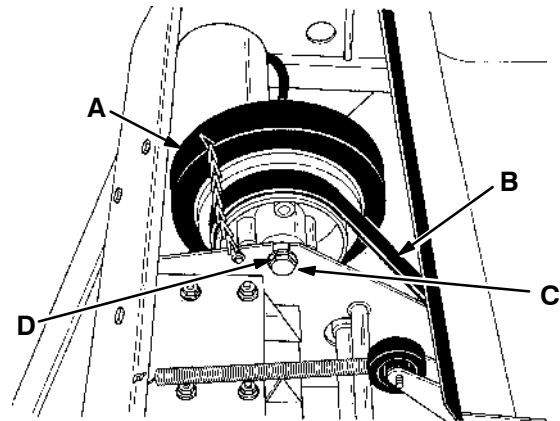
TO REPLACE FLAT PROPELLING BELT

1. Stop the engine and remove the spark plug wire.



WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Remove debris hopper.
3. Loosen the clutch cable jam nut.
4. Thread the clutch cable almost out of the cable bracket.
5. Carefully tip the machine on its side.
6. Remove the drive wheel retaining bolt. Take note of bolt spacer positions.



01221

DRIVE WHEEL

- A. Drive Wheel
- B. Flat Propelling Belt
- C. Retaining Bolt
- D. Spacer

7. Slide the flat propelling belt off the drive wheel.
8. Remove the drive wheel.
9. Remove the flat propelling belt.
10. Slide new flat propelling belt over the belt idler pulley.
11. Position flat propelling belt over the pulley portion of the drive wheel and slide drive wheel into position in machine.

MAINTENANCE

- Slide the drive wheel retaining bolt through the frame cutout, the drive wheel, and the other side frame cutout.

NOTE: Make sure drive wheel spacers removed earlier are placed in the same positions.

- Thread the retaining nut onto the retaining bolt and tighten.
- Carefully tip the machine back into the "operating" position.
- Replace the debris hopper.
- Adjust the clutch cable as described in *TO ADJUST FLAT PROPELLING BELT*.

ENGINE DRIVE BELT

The engine drive belt transfers power from the engine to the vacuum fan and the engine jackshaft. Check the belt for wear after every 80 hours of operation. There is no tension adjustment as it is controlled by a belt idler and spring arrangement.

TO REPLACE ENGINE DRIVE BELT

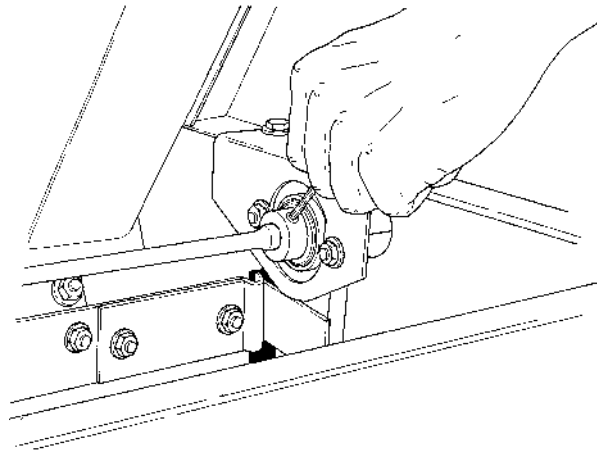
- Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

- Unlatch and remove the rear filter cover.
- Remove the rear shroud.
- Disconnect the belt idler spring from the engine bracket.

NOTE: For machines equipped with a side brush:

- A. Loosen the jackshaft extension support bearing locking collar setscrew.



01204 LOOSENING JACKSHAFT EXTENSION SUPPORT BEARING LOCKING COLLAR

- B. Unthread and separate the jackshaft extension from the jackshaft enough to slide the drive belt through. Also note that the jackshaft extension is threaded onto the jackshaft with left hand threads.

- Remove existing drive belt.
- Position new drive belt over vacuum fan sheave, large diameter sheave, and engine sheave.

NOTE: For machines equipped with a side brush:

- A. Reconnect and tighten the jackshaft extension to the jackshaft. Remember the jackshaft extension is threaded onto the jackshaft with left hand threads.
- B. Reposition the jackshaft extension support bearing locking collar and tighten its setscrews.
- Reconnect the belt idler spring to the engine bracket.
- Reinstall the rear shroud.
- Replace the rear filter cover.

BRUSH DRIVE BELT

The brush drive belt transfers power from the motor jackshaft to the brush drive plug. Check the belt for wear after every 80 hours of operation. There is no tension adjustment as it is controlled by a belt idler and spring arrangement.

TO REPLACE BRUSH DRIVE BELT

1. Stop the engine and remove the spark plug wire.



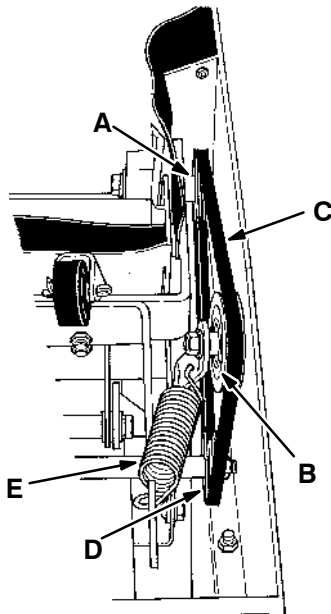
WARNING: Brush Throws Debris. Stop Motor Before Lifting Hopper.

2. Remove the debris hopper.
3. Carefully tip the machine on its right side.
4. Disconnect the belt idler spring from the spring bracket.

5. Slide the belt off the jackshaft sheave, the brush drive sheave, and out of the machine.

NOTE: A small amount of force from a blunt instrument may be required to get the belt over the end of the jackshaft.

6. Slide the new belt over the end of the jackshaft and into position on the three sheaves.
7. Reconnect the belt idler spring to the spring bracket.
8. Carefully tip the machine into the “operating” position.
9. Replace the debris hopper.



BRUSH DRIVE BELT

01223

- A. Brush Drive Sheave**
- B. Belt Idler Sheave**
- C. Brush Drive Belt**
- D. Motor Jackshaft Sheave**
- E. Belt Idler Spring**

MAINTENANCE

SIDE BRUSH DRIVE BELT

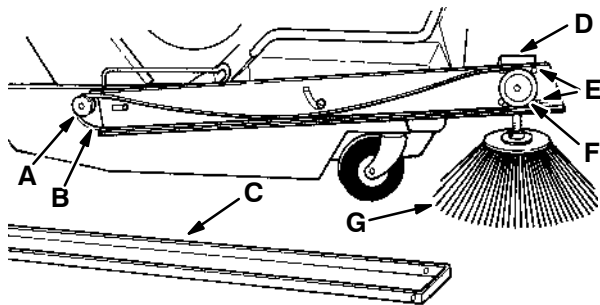
The side brush drive belt transfers power from the jackshaft extension to the side brush gear box. Check the belt for wear after every 80 hours of operation. Adjust the drive belt tension after every 160 hours of operation.

TO ADJUST SIDE BRUSH DRIVE BELT

1. Stop the engine and remove the spark plug wire.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Place the side brush arm in the “operating” position.
3. Remove the five side brush arm cover bolts.
4. Remove the side brush arm cover.
5. Loosen the four gearbox mounting bolts.



SIDE BRUSH DRIVE BELT

01224

- A. Jackshaft Extension Sheave
- B. Side Brush Drive Belt
- C. Side Brush Arm Cover
- D. Gearbox
- E. Gearbox Mounting Bolts
- F. Gearbox Sheave
- G. Side Brush

6. Slide the gearbox forward to increase belt tension. Slide the gearbox back to decrease belt tension.
7. When belt appears tight, tighten the four gearbox mounting bolts.
8. Replace the side brush arm cover.
9. Start the engine and check side brush operation. Readjust the drive belt as necessary.

TO REPLACE SIDE BRUSH DRIVE BELT

1. Stop the engine and remove the spark plug wire.

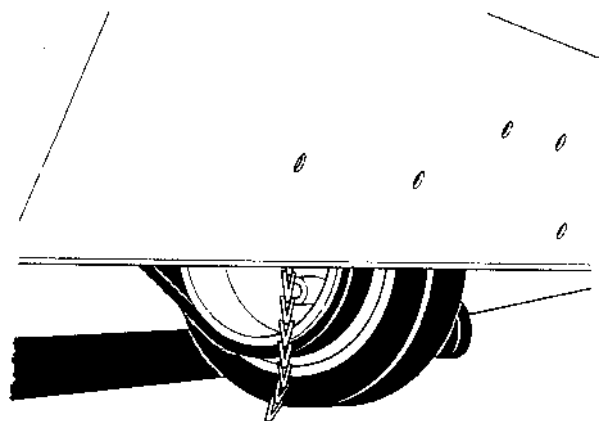
FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, And Turn Off Machine And Remove Key.

2. Place the side brush arm in the “raised” position.
3. Remove the five side brush arm cover bolts.
4. Remove the side brush arm cover.
5. Loosen the four gearbox mounting bolts.
6. Slide the gearbox back, toward the machine.
7. Remove the old drive belt.
8. Position new drive belt over the jackshaft extension sheave and the gearbox sheave.
9. Adjust the side brush drive belt tension as described in *TO ADJUST SIDE BRUSH DRIVE BELT*.

STATIC DRAG CHAIN

A static drag chain is provided to prevent the buildup of static electricity in the machine. The chain is attached near the rear of the machine.

Check the chain for wear after every 160 hours of operation. Make sure the chain is making contact with the floor at all times.



STATIC DRAG CHAIN

01225

PUSHING AND TRANSPORTING THE MACHINE

PUSHING THE MACHINE

If the machine becomes disabled, it can be easily pushed in neutral if necessary.

TRANSPORTING THE MACHINE

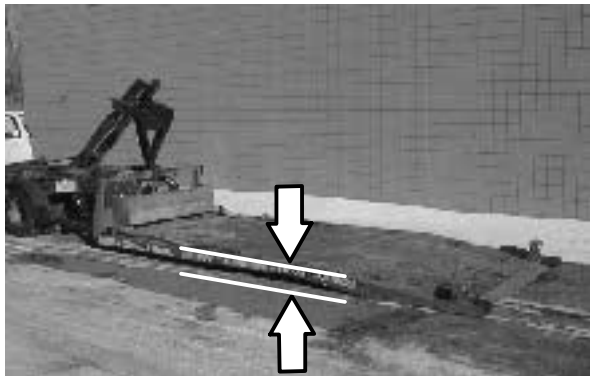
1. Position the front of the machine at the loading edge of the truck or trailer.

FOR SAFETY: Use Truck Or Trailer That Will Support The Weight Of The Machine.

NOTE: Empty the hopper before transporting the machine.

2. If the loading surface is not horizontal or is higher than 380 mm (15 in) from the ground, use a winch to load machine.

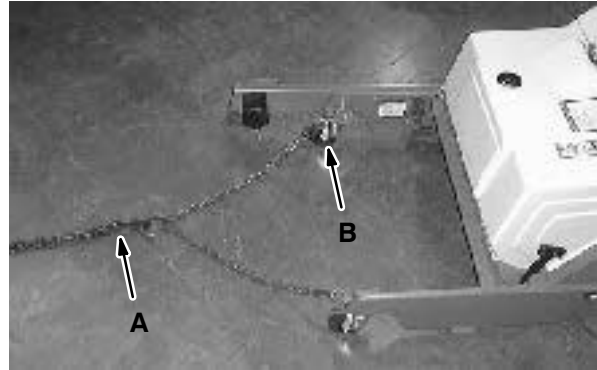
If the loading surface is horizontal AND is 380 mm (15 in) or less from the ground, the machine may be pushed onto the truck or trailer.



LOADING SURFACE

A. Loading Surface Height

3. To winch the machine onto the truck or trailer, remove the hopper and attach the winching chains to the top of the front casters. Make sure the machine is centered.

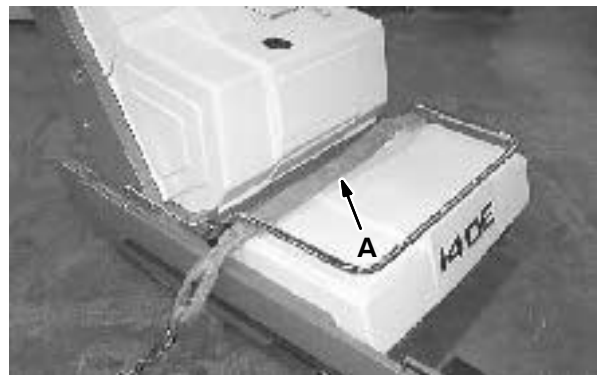


ATTACH WINCHING CHAIN

- A. Winching Chain**
- B. Front Caster**

FOR SAFETY: When Loading Machine Onto Truck Or Trailer, Use Winch. Do Not Push The Machine Onto The Truck Or Trailer Unless The Loading Surface Is Horizontal AND Is 380 mm (15 in) Or Less From The Ground.

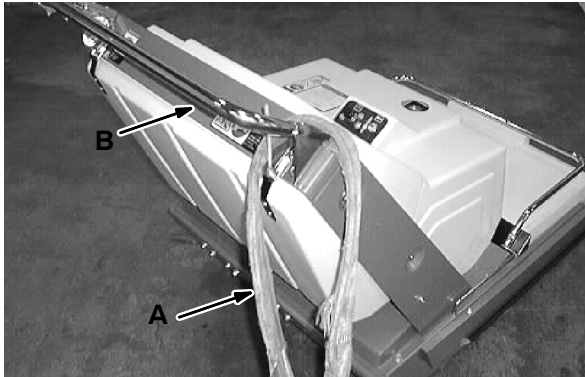
4. Position the machine onto the truck or trailer as far as possible. If the machine starts to veer off the centerline of the truck or trailer, stop and center the machine.
5. Block the machine tires. Tie down the machine to the truck or trailer before transporting.
6. Secure the front of the machine by wrapping a strap around the hopper and fastening it to the truck or trailer.



FRONT TIE DOWN STRAP

- A. Front Tie Strap**

7. Secure the rear of the machine by wrapping straps around each end of the the handle and fastening them to the truck or trailer.



REAR TIE DOWN STRAP

- A. Rear Tie Down Strap**
- B. Handle**

8. If the loading surface is not horizontal or is higher than 380 mm (15 in) from the ground, use a winch to unload machine.

If the loading surface is horizontal AND is 380 mm (15 in) or less from the ground, the machine may be pushed off the truck or trailer.

FOR SAFETY: When Unloading Machine Off Truck Or Trailer, Use Winch. Do Not Push The Machine Off The Truck Or Trailer Unless The Loading Surface Is Horizontal AND Is 380 mm (15 in) Or Less From The Ground.

SECTION 4

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METRIC BOLT TORQUE CHART	4-3
BOLT IDENTIFICATION	4-3
THREAD SEALANT AND LOCKING COMPOUNDS	4-3

HARDWARE INFORMATION

The following charts state standard plated hardware tightening ranges for normal assembly applications. Decrease the specified torque by 20% when using a thread lubricant. Do not substitute lower grade hardware for higher grade hardware. If higher grade hardware than specified is substituted, tighten only to the specified hardware torque value to avoid damaging the threads of the part being threaded into, as when threading into speed nuts or weldments.

STANDARD BOLT TORQUE CHART

Thread Size	SAE Grade 5 Torque ft lb (Nm)	SAE Grade 8 Torque ft lb (Nm)
0.25 in	7-10 (9-14)	10-13 (14-38)
0.31 in	15-20 (20-27)	20-26 (27-35)
0.38 in	27-35 (37-47)	36-47 (49-64)
0.44 in	43-56 (58-76)	53-76 (72-103)
0.50 in	65-85 (88-115)	89-116 (121-157)
0.62 in	130-170 (176-231)	117-265 (159-359)
0.75 in	215-280 (291-380)	313-407 (424-552)
1.00 in	500-650 (678-881)	757-984 (1026-1334)





NOTE: Decrease torque by 20% when using a thread lubricant.

METRIC BOLT TORQUE CHART

Thread Size	Class 8.8 Torque ft lb (Nm)	Class 10.9 Torque ft lb (Nm)
M4	2 (3)	3 (4)
M5	4 (5)	6 (8)
M6	7 (9)	10 (14)
M8	18 (24)	25 (34)
M10	32 (43)	47 (64)
M12	58 (79)	83 (112)
M14	94 (127)	133 (180)
M16	144 (195)	196 (265)
M20	260 (352)	336 (455)
M24	470 (637)	664 (900)

NOTE: Decrease torque by 20% when using a thread lubricant.

BOLT IDENTIFICATION

Identification Grade Marking	Specification and Grade
	SAE-Grade 5
	SAE-Grade 8
	ISO-Grade 8.8
	ISO-Grade 10.9

01395

THREAD SEALANT AND LOCKING COMPOUNDS

Thread sealants and locking compounds may be used on this machine. They include the following:

Loctite 515 sealant – gasket forming material. TENNANT® Part No. 75567, 15 oz (440 ml) cartridge.

Loctite 242 blue – medium strength thread locking compound. TENNANT® Part No. 32676, 0.5 ml tube.

Loctite 271 red – high strength thread locking compound. TENNANT® Part No. 19857, 0.5 ml tube.

HOW TO USE THIS MANUAL

This section on *HOW TO USE THIS MANUAL* will tell you how to:

- Find important machine information for ordering correct repair parts.
- Find TENNANT part numbers.
- Order TENNANT parts and supplies.

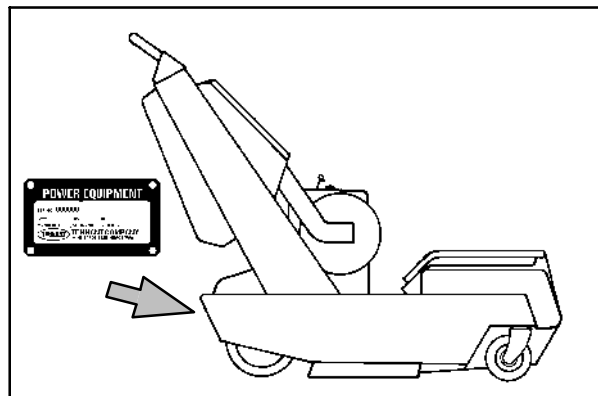
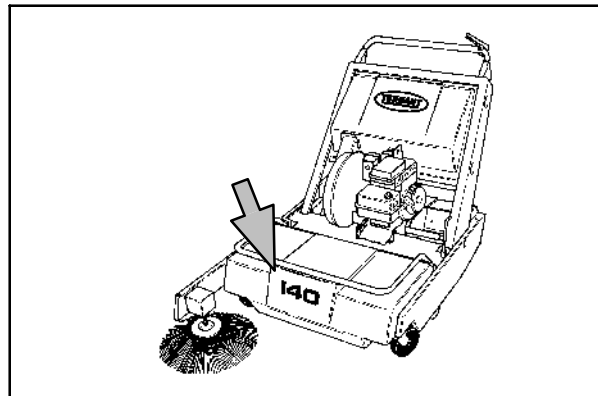
IMPORTANT INFORMATION

When placing an order for parts, the machine model and machine serial number are important. Refer to the *MACHINE DATA* box which is filled out during the installation of your machine. The *MACHINE DATA* box is located on the inside of the front cover of this manual.

The model number of your machine is on the front of the machine.

The serial number of your machine is printed on the machine data plate located as shown.

MACHINE DATA	
<i>Please fill out at time of installation for future reference.</i>	
Machine Model Number -	140
Machine Serial Number -	_____
Machine Options -	_____
TENNANT Representative/phone no. -	_____
Customer ID Number -	_____
Date of Installation -	_____
Manual Number -	MM130
Revision:	19
Published:	12-00



HOW TO USE THIS MANUAL

FINDING A TENNANT PART NUMBER

This manual contains the following sections:

- HOW TO USE THIS MANUAL
- STANDARD PARTS
- OPTIONS
- ENGINE PARTS
- CROSS REFERENCE

The STANDARD PARTS section lists repair parts for standard machines. They are grouped in this general order:

- General wear parts.
- Machine frame and related parts.
- Machine propelling system.
- Scrubbing components.
- Electrical parts.

The OPTION section lists repair parts of options.

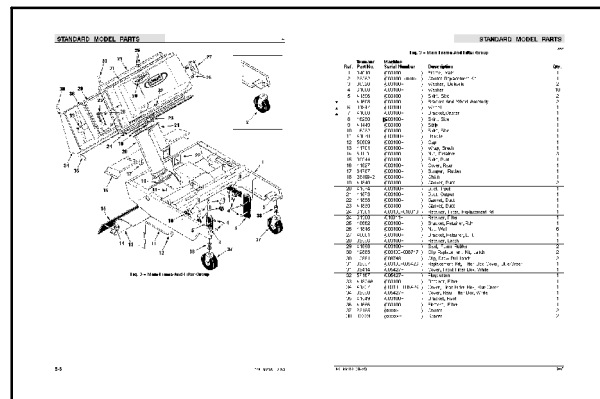
The ENGINE PARTS section lists available repair parts of the engine.

All sections in this manual consist of parts illustrations and corresponding parts lists.

The parts illustrations are numbered with **Ref** numbers which refer to corresponding parts lists.

The parts lists include a number of columns of information:

- **Ref** - column refers to the reference number on the parts illustration.
- ∇ - indicates the part is an assembly.
- ▲ - indicates the part is included in the assembly listed just before it.
- **TENNANT Part No.** - column lists the TENNANT part number for the part.
- **Serial Number** - column indicates the set of machines the part number is applicable to. Serial numbers change when the machine design has been modified. The most current design of the machine is shown in the main illustration, older designs are boxed in a corner of the illustration.
- **Description** - column is a brief description of the part.
- **Qty.** - column lists the quantity of that part used in that area of the machine.



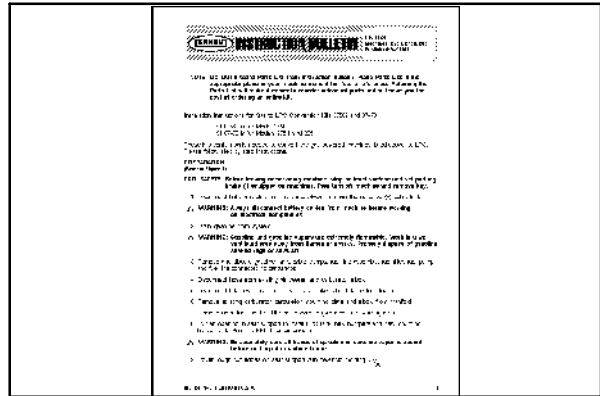
STANDARD MODEL PARTS

Fig. 3 - Main Frame And Filter Group

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	04010	003100-	Filter, Mesh	1
2	23262	003100-xxxxxx	Caster Replacement Kit	1
3	38328	003100-	Washer, Belleville	2
4	61036	003100-	Washer	10
5	41396	003100-	Skirt, Skid	2
6	41868	003100-	Bracket And Wheel Assembly	2
▲	61847	003100-	Wheel	1
▲	41630	003100-	Bracket,Caster	1
8	15230	003100-	Skirt, Skid	1
9	41443	003100-	Strip	1
10	15232	003100-	Skirt, Skid	1
11	41670	003100-	Handle	1
12	63630	003100-	Cap	1
13	41701	003100-	Wiper, Brush	1
14	61110	003100-	Nut, Retainer	3
15	09944	003100-	Skirt, Dust	1
16	41627	003100-	Cover, Rear	1
17	64757	003100-	Dumper, Rubber	1
18	28493-2	003100-	Chain	1
19	41840	003100-	Gasket, Duct	2

NOTE: If a service kit is installed on your machine, be sure to keep the **INSTRUCTION BULLETIN** which came with the kit. It contains repair parts numbers needed for ordering future parts.

NOTE: Fasteners used in this machine may be metric or non-metric. Take care when replacing hardware to replace with same thread size.



PLACING AN ORDER

Orders may be placed by phone, fax, or by mail. Phone orders may need written confirmation. Follow the steps below to insure prompt delivery:

1. Identify the model number of your machine.
2. Identify the serial number of your machine.
3. Find the part number of the part you need. Do not order by page number or reference number. If you are not able to find the part number, call your TENNANT representative for help or send the old part as a sample.
4. Determine the quantity of the part you need.
5. Provide the following company information:
 - Company name
 - Customer ID Number
 - Shipping address
 - Billing address
 - First and last name of person ordering parts
 - Telephone number
 - Purchase order number
6. Provide definitive shipping instructions.

HOW TO USE THIS MANUAL

Any claim for loss or damage to a shipment in transit should be filed promptly with the transportation company making the delivery. Shipments will be complete unless the packing list or order acknowledgement indicates items back ordered.

If parts received are suspected to be incorrect or defective, please contact the TENNANT representative from whom you ordered the part. They will give authorization for return and/or handle replacement shipments when required.

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*NOTE: SECTION 6, STANDARD MODEL PARTS,
lists repair parts for a standard model, gasoline
powered machine.*

Fig. 1 - Recommended General Maintenance Items

Ref.	Tenant Part No.	Machine Serial Number	Description	Qty.
▽	59454	(003100-	) Replmt.Parts Pkg 140	1
▲	41656	(003100-	) Filter Pkg, Dust, Panl, 119plts	1
▲	41833	(003100-	) Belt, V, [3v] 26.5l, Cogged	1
▲	23243	(003100-	) Belt, V, [3l] 36.0l	1
▲	41678	(003100-	) Belt, V, [3l] 80.0l	1
▲	59493	(003100-	) Cleaner, Air	1
▲	45770-4	(003100-	) Sparkplug	1
▲	09944	(003100-	) Skirt	2
▲	41563	(003100-	) Skirt, .06th, 10.00w 30.00l, 06/0.31h	1
▲	41396	(003100-	) Skirt	2
▲	09944	(003100-	) Skirt	1
▲	16232	(003100-	) Skirt	1
▲	16230	(003100-	) Skirt	1
▲	01847	(003100-	) Wheel, 1.6d 0.72w 0.21b	2
▽	03972	(003100-	) Kit, Maint, Seals, Gas, [140]	1
▲	47037	(003100-	) Adhesive, Contact, [1357 5.0oz]	1
▲	41858	(003100-	) Seal, Foam, Rbr, .38 0.75w 94.0l	3
▲	02592	(003100-	) Seal, Rbr, Open, 0.19th, 0.62w 04.6l	2
▲	41838	(003100-	) Gasket, Duct, Output	1
▲	41837	(003100-	) Hinge, Pyp, .06 2.0 W 03.3l 4/0.34h	1
▲	41840	(003100-	) Gasket, Duct	2
▲	60378	(003100-	) Seal, Rbr, Open, 0.19th, 0.62w	1
▽	03973	(003100-	) Kit, Maint, Skirt, Gas, [140]	1
▲	16232	(003100-	) Skirt	1
▲	41396	(003100-	) Skirt	2
▲	16230	(003100-	) Skirt	1
▲	09944	(003100-	) Skirt	1
▲	61110	(003100-	) Nut, U, .25-20	3
▲	09944	(003100-	) Skirt	1
▲	41563	(003100-	) Skirt, .06th, 10.00w 30.00l, 06/0.31h	1
▽	03974	(003100-	) Kit, Maint, 100hour [140]	1
▲	45770-4	(003100-	) Sparkplug	1
▲	03970	(003100-	) Cleaner, Air	1

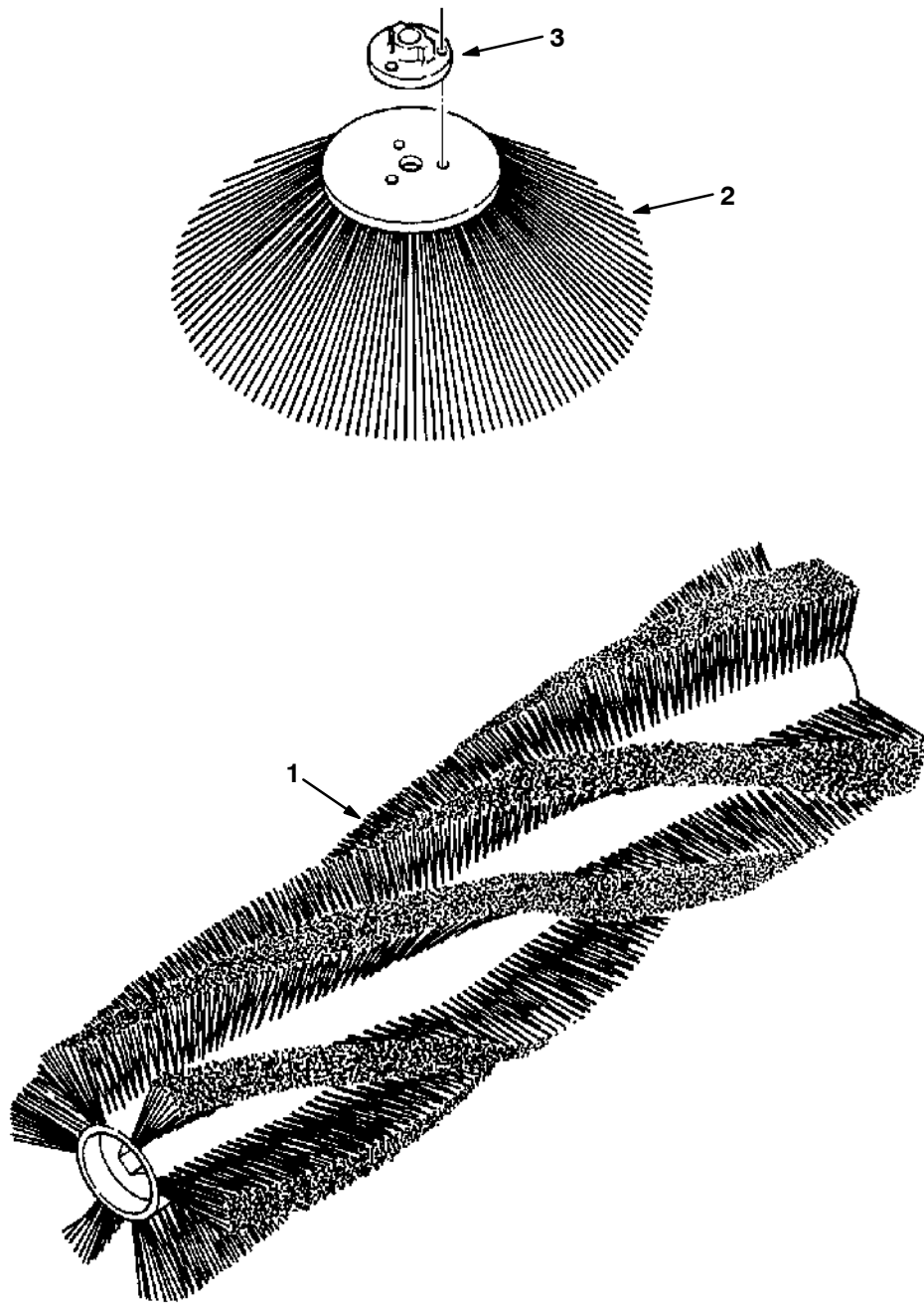


Fig. 2 - Replacement Brushes

Fig. 2 - Replacement Brushes

	Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
	1	41457	(006900-	) Brush, Swp, 28l, 6 Dr, Pyp	1
▽	2	41673	(006900-	) Brush Assy, Disk, Swp, 13.0 D, Pyp	1
▲	3	28013B	(006900-	) Adaptor, Brush, Side, .628b	1

Fig. 3 - Main Frame And Filter Group

Ref.	Tenant Part No.	Machine Serial Number	Description	Qty.
1	04010	(003100-	) Frame Wldt, Main, [140/140e]	1
2	23252	(003100-012083	) Kit, Replmt, Caster And Spacer	1
3	36328	(003100-	) Washer, Belleville, .50	2
4	61088	(003100-	) Washer, 0.19b 1.00d .06, Stl, PI	10
5	41396	(003100-	) Skirt	2
▽	41608	(003100-	) Bracket / Wheel Assy	2
▲	6 01847	(003100-	) Wheel, 1.6d 0.72w 0.21b	1
▲	7 41600	(003100-	) Bracket, Mtg, Caster	1
8	16230	(003100-	) Skirt	1
9	41449	(003100-	) Strip	1
10	16232	(003100-	) Skirt	1
11	41670	(003100-	) Handle	1
12	50609	(003100-	) Cap, Plug	1
13	41701	(003100-	) Panel, Brush	1
14	61110	(003100-	) Nut, U, .25-20	3
15	09944	(003100-	) Skirt	1
16	41827	(003100-	) Cover, Frame, Rear, [140e]	1
17	64757	(003100-	) Bumper, Rbr, 0.5d 0.14t Adh	1
18	28499-2	(003100-	) Chain, Sash, #35, 05.3l 09 Link	1
19	41840	(003100-	) Gasket, Duct	2
20	41574	(003100-	) Duct, Input	1
21	41573	(003100-	) Duct, Outlet, 3.0 3.0 7.8l Pye	1
22	41838	(003100-	) Gasket, Duct, Output	1
23	41839	(003100-	) Gasket, Duct	1
24	61381	(003100-010310	) Kit, Replmt, Brackets, F/16242/41612	1
24	61380	(010311-	) Bracket, Fltr, Retainer	1
25	48662	(003100-	) Bracket, Retainer, Fltr, Rh	1
26	41845	(003100-	) Nut, Isolator, .25-20 #1/4-S	6
27	48661	(003100-	) Bracket, Retainer, Fltr, Lh	1
28	32556	(003100-	) Retainer	1
29	41858	(003100-	) Seal, Foam, Rbr, .38 0.75w 94.0l	2
30	12883	(003100-008747	) Kit, Replmt, Clip, Latch, F/ 41550	2
30	12881	(008748-	) Clip, Latch	2
31	02557	(003100-005426	) Kit, Replmt, Cover, Fltr Box, [140]	1
31	02414	(005427-	) Cover, Filterbox, Front, W/ Logo	1
32	57167	(005427-	) Button, Plug, 0.62h .03-.12 [Black Nyl]	1
33	41824A	(003100-	) Retainer	1
34	41527	(003100-005426	) Cover, Rear, Filterbox, Rear, Plstc	1
34	02558	(005427-	) Cover, Filterbox, Rear	1
35	41549	(003100-	) Bracket, Pivot, Fltr Cover	1
36	41656	(003100-	) Filter Pkg, Dust, Panl, 119pits	1
37	23155	(012083-	) Caster, Stem, Swivel, 4.0 D	2
38	82229	(012083-	) Sleeve	2

STANDARD MODEL PARTS

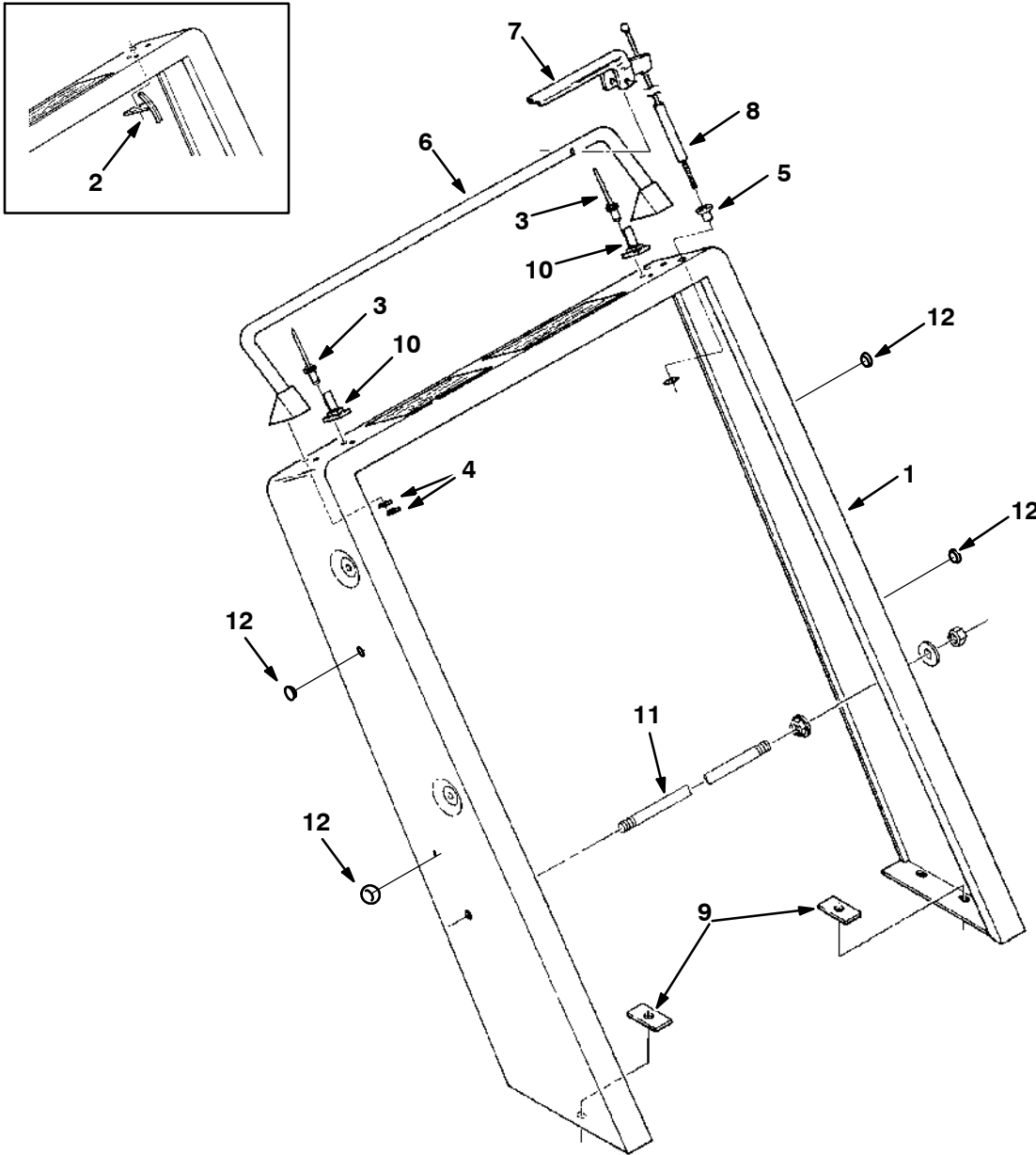


Fig. 4 - Handle Group

02632

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	31914	(003100-005426)	Kit, Replmt, Frame, F/ 48625-1	1
1	31912	(005427-008747)	Kit, Replmt, Frame, F/ 09003	1
1	31918	(008748-)	Handle Assy, W/ Label, [140]	1
2	61379	(003100-010049)	Kit, Replmt, Cable Guide, Clutch	1
3	60428	(003100-)	Rivet, Blind, .188d X 0.58 X .38d, Stl	4
4	41665	(003100-)	Nut, Speed, Retainer, .25-20	4
5	61377	(010050-)	Bushing, Flng, 0.28b 0.50d 0.50l, Pye	1
6	41567-1	(003100-)	Handle Assy, Tube, 1.00d 24.9w	1
7	41832	(003100-)	Handle, Clutch	1
8	41829	(003100-)	Cable, .13d, 28.5l, .25-20 /.38ball	1
9	08868	(003100-)	Bar, Flt, Stl, 0.12 X 0.9 X 2.0 L	2
10	23709	(003100-)	Catch	2
11	60426	(003100-)	Rod	1
12	379000	(003100-)	Button, Plug	4

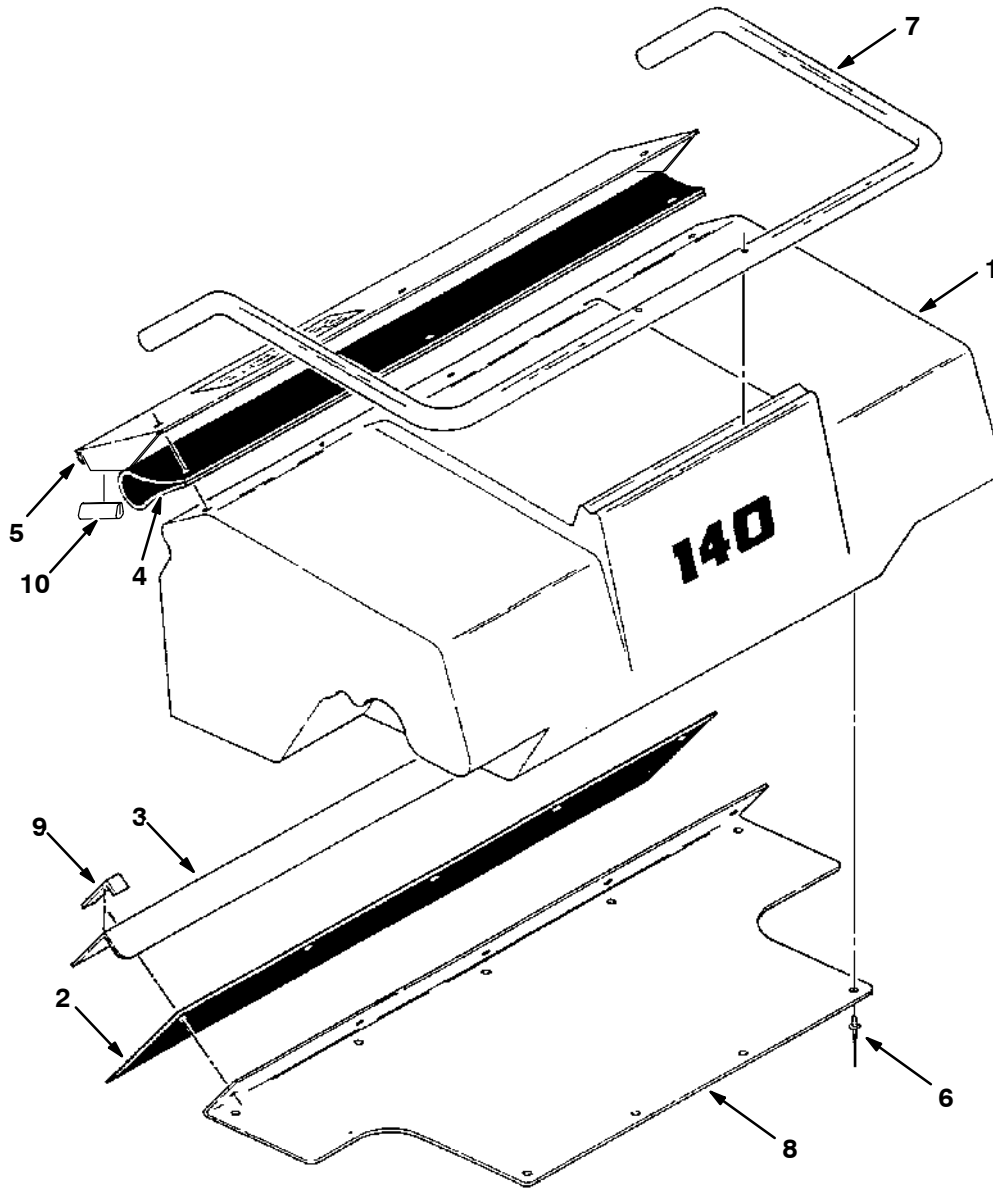


Fig. 5 - Hopper Assembly

02636

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
▽ 1	41870	(003100-	) Hopper Assy, [140/140e/141e]	1
▲ 2	09944	(003100-	) Skirt	1
▲ 3	41447	(003100-	) Retainer, Skirt, Hppr, Rear,	1
▲ 4	41563	(003100-	) Skirt, .06th, 10.00w 30.00l, 06/0.31h	1
▲ 5	41568	(003100-	) Retainer, Seal, W/ Label, Rear	1
▲ 6	06524	(003100-	) Rivet, Blind, .196d X 0.62 X .38d, Alm	9
▲ 7	41513	(003100-	) Handle, Hppr	1
▲ 8	41448	(003100-	) Shield, Hppr	1
▲ 9	02592	(003100-	) Seal, Rbr, Open, 0.19th, 0.62w 04.6l	2
▲ 10	398207	(003100-	) Molding, Trim, Rubber, .06 1.4l	2

STANDARD MODEL PARTS

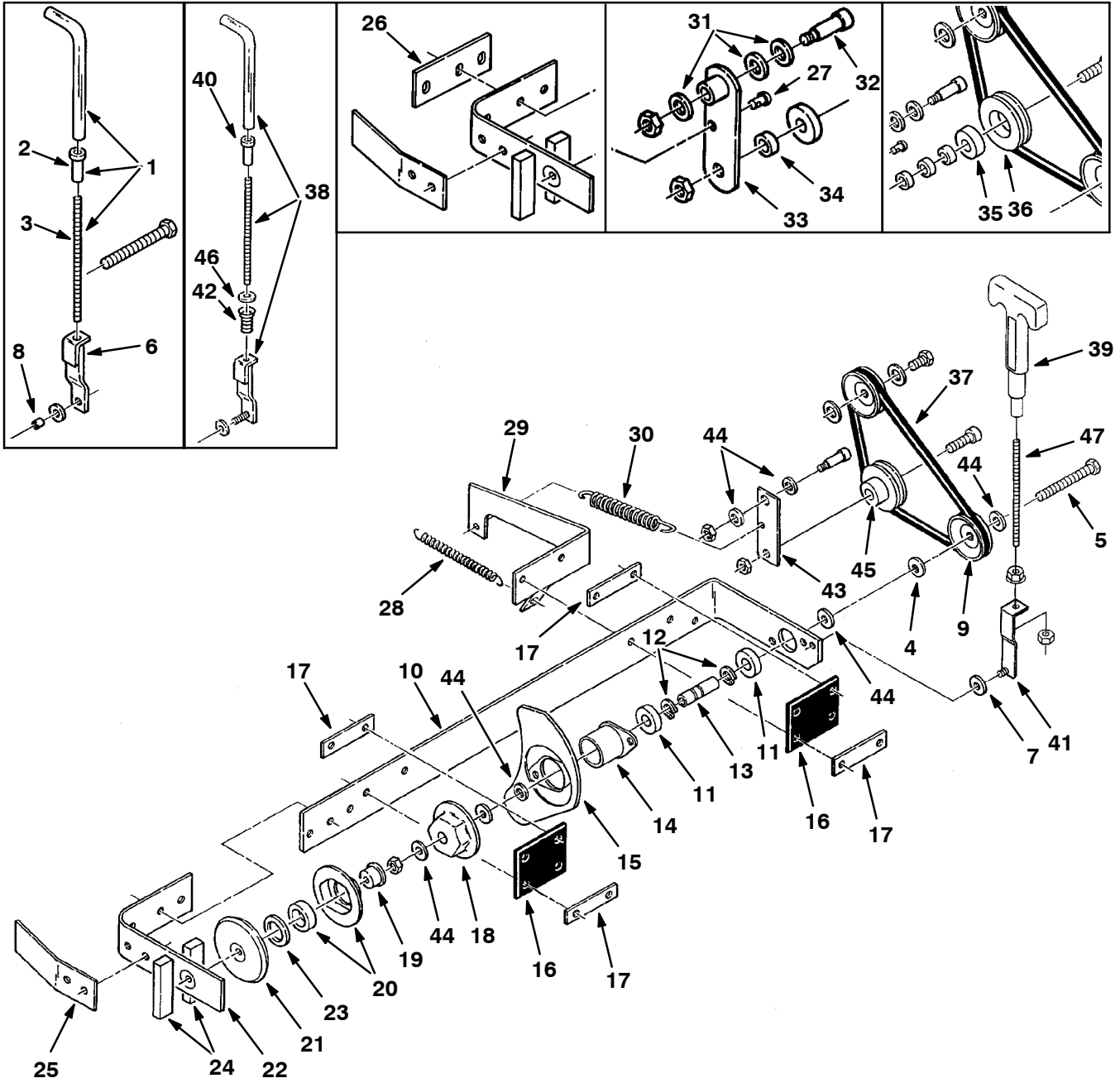


Fig. 6 - Brush Drive Group

Fig. 6 - Brush Drive Group

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
▽	1	45638	(003100-006889) Handle Rep.By25147	1
▲	2	41743	(003100-006889) Bushing, Flng, 0.30b 0.52d . L, Nyl	1
▲	3	41745	(003100-006889) Rod, Threaded Rep.By25147	1
	4	41499	(003100-) Washer Rep.By70007	1
	5	35708	(003100-) Screw, Hex, .38-16 X 3.25, 5	1
	6	41607	(003100- xxxxxx) Bracket Rep.By25147	1
	7	24924	(003100-) Washer, 0.28b 0.62d .06, Nyl	1
	8	54160	(003100- xxxxxx) Sleeve	1
	9	41820	(003100- xxxxxx) Sheave, [3v], 1grv, 02.3pd 0.38b	1
	9	32562	(xxxxxx-) Sheave, [3v], 1grv, 03.5pd 0.38b	1
	10	16237	(003100-) Arm, Brush, Main, Drive	1
▽		41648	(003100-) Shaft	1
▲	11	41360AM	(003100-) Bearing, Ball, 0.59b 1.26d 0.35w	2
▲	12	01516	(003100-) Ring, Retaining, Ext, 0.59d, Basic	2
▲	13	47751	(003100-) Shaft	1
▲	14	41362	(003100-) Bushing Assy, Flng, 2 Hole, 1.25b	1
	15	41363	(003100-) Cover, Flng, Drive, Gray	1
	16	41837	(003100-) Hinge, Pyp, .06 2.0 W 03.3l 4/0.34h	2
	17	41411	(003100-) Strip, Stl, 0.07th X 00.90w, 03.30l	4
	18	41357	(003100-) Cup, Drive, Brush Tube- Grey	1
▽		41518	(003100-) Arm Assy, Brush, Main, [140]	1
▲	19	41385	(003100-) Bar, Hex, Stl, Mach, Sleeve, Idler	1
▲	20	41649	(003100-) Cup & Bearing Assy -Brush	1
▲	21	41386	(003100-) Guard, Cup, Gray	1
▲	22	41509	(003100-) Arm, Brush, Main, Rh	1
▲	23	09006	(003100-) Washer	1
	24	41637	(003100-) Seal, Foam, Rbr, .50 0.75w 03.0l	2
	25	41669	(003100-) Plate	1
	26	41864	(003100-008073) Plate Rep.Bynone	1
	27	39019	(003100-008087) Pin, Clevis, 0.37 D X 0.75l	1
	28	29260	(003100-) Spring, Extn, 0.75od X 0.06wir, 5.3l	1
	29	41741	(003100-) Bracket, Mtg, Spring	1
	30	29499	(003100-) Spring, Extn, 0.75od X 0.11wir, 4.5l	1
	31	41818	(003100-008087) Washer, 0.38b 0.56d .03, Stl	3
	32	56060	(003100-008087) Bolt, Shld, .38d X 1.00, .31-18	1
	33	09971	(003100-008087) Kit, Replmt, Idler Arm, F/ 41817	1
	34	49566	(003100-008087) Sleeve	1
	35	01845	(003100-009133) Bearing, Ball, 0.39b 1.18d 0.35w	1
	36	50038	(003100-009133) Kit, Replmt, Idler, F/ [41819&47]	1
	37	41833	(003100- xxxxxx) Belt, V, [3v] 26.5l, Cogged	1
	37	32862	(xxxxxx-) Belt, V, [3vx] 28.0l	1
	38	25147	(003100-010682) Kit, Replmt, Handle / Bracket	1
	39	25950	(010683-) Handle, Lift, Brush, [140l]	1
	40	41743	(006900-010682) Bushing, Flng, 0.30b 0.52d . L, Nyl	1
	41	25148	(010683-) Bracket Wldt, Brush Lift	1
	42	32553	(xxxxxx-010682) Spring, Cmpr, 0.72od .55wir 3.0l	1
	43	09945	(008088-) Idler Arm	1
	44	32491	(008088-) Washer, Flt, .31 Std	6
	45	02355	(009134-) Sheave, [3v], 1grv, 03.0pd 0.38brg	1
	46	24227	(006900-010682) Washer, Flat	1
	47	31906	(010683-) Rod, Thrd, Full, .31-18 05.7l	1

STANDARD MODEL PARTS

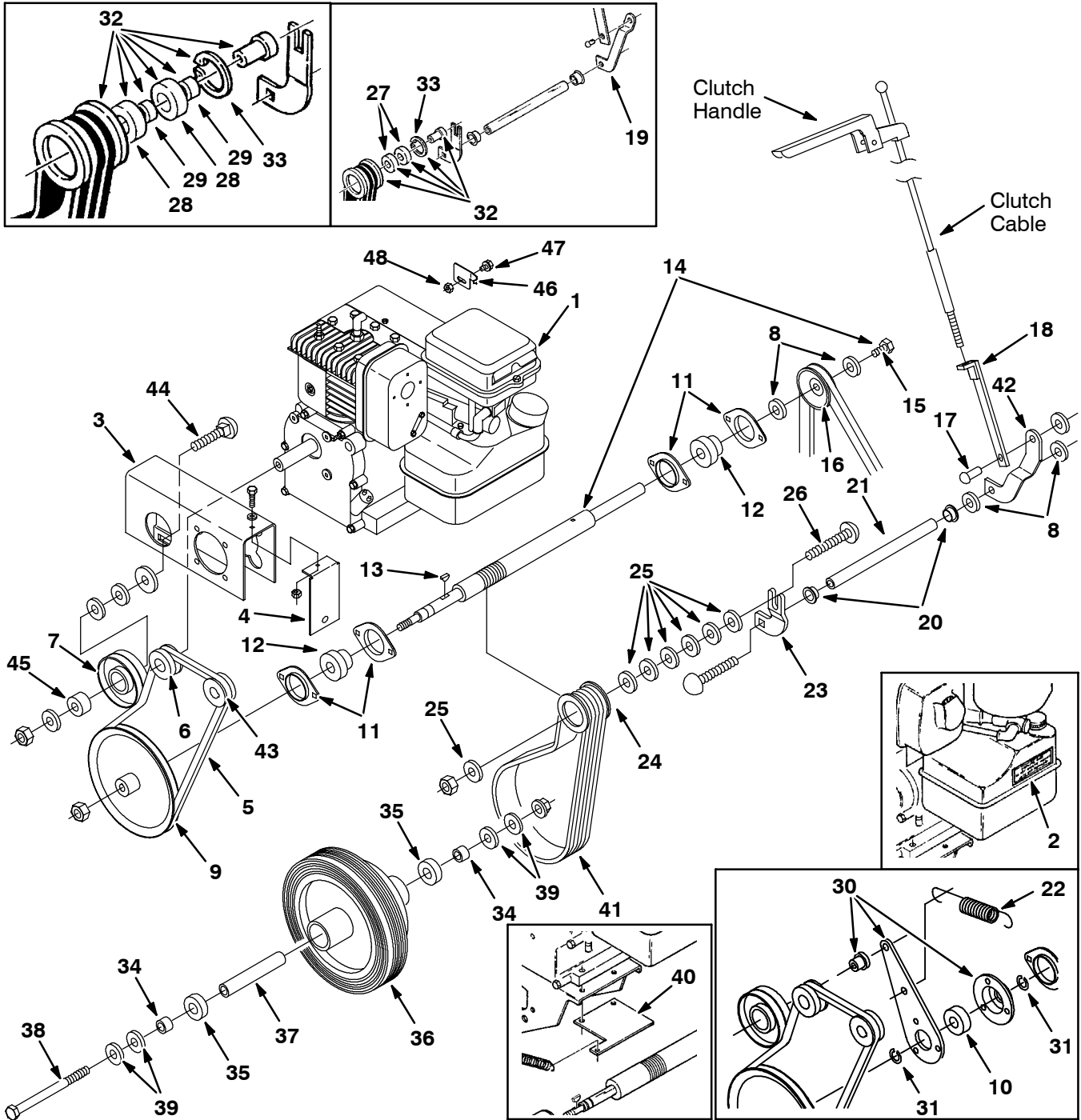


Fig. 7 - Engine And Wheel Drive Group

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	41861	(003100-004030)	Engine	1
1	41515	(004031-004554)	Engine	1
1	19846	(004555-004821)	Engine	1
1	16489	(004822-005223)	Engine	1
1	02590	(005224-008036)	Engine Rep.Bysk1612	1
1	09906	(008037-009270)	Engine Rep.By50062	1
1	50062	(009271-011668)	Engine Rep.By70137	1
1	70065	(011235-011235)	Engine	1
1	70183	(011669-)	Engine Assy, B&S, Gas, 3.5hp	1
1	48768	(011669-)	Engine Assy, B&S, Gas, 3.5hp, Calif	1

Fig. 7 - Engine And Wheel Drive Group

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.	
2	19048	(003100-009270)	Label, Caution, [Gasoline Only]	1	
3	50087	(003100-	) Bracket, Mtg, Vacfan	1
4	41592	(003100-	) Guard, Belt	1
5	41836	(003100-	) Belt, V Rep.By23243	1
6	41558	(003100-	) Sheave, [3l], 1grv, 01.6pd 0.75b	1
7	28223	(003100-	) Sheave, Flat, 3.0d 0.68w, Brg, 0.62b	1
8	41187	(003100-	) Washer, Belleville, .38	2
9	41863	(003100-	) Sheave, [3l], 1grv, 06.4pd 0.38b	1
10	28010	(003100-010488)	Bearing, Ball, 0.62b 1.38d 0.43w	1	
11	48636	(003100-	) Flange, Brg, 1.5id 2h	4
12	48635	(003100-	) Bearing, W/ Collar, 0.63b 1.57d 1.12w	2
13	00500-1	(003100-	) Key, Woodruff, 0.09 0.50, [Asa#0304]	1
▽	14	04594	(003100-) Kit, Replmt, Shaft, F/39571	1
▲	15	06460	(003100-) Screw, Hex, .38-16 X 1.00, Lh	1
16	41820	(003100-	) Sheave, [3v], 1grv, 02.3pd 0.38b	1
17	04733-2	(003100-	) Pin, Clevis, 0.37 D X 0.62l	1
18	41828-1	(003100-	) Bracket Wldt, Clutch, Propel	1
19	31905	(003100-008512)	Kit, Replmt, Arm, Clutch, F/ 41611	1	
20	41434	(003100-	) Bushing, Flng, 0.62b 0.68d 0.00l, Nyl	2
21	41571	(003100-	) Shaft, Cntrl, Clutch	1
22	41841	(003100-010488)	Spring, Extn, 0.75od X 0.11wir, 6.5l	1	
▽	31233	(003100-	) Arm Assy, Clutch, Propel, [140]	1
▲	23	41521	(003100-) Arm, Idler, Clutch, Propel, Rh	1
▲	24	01199	(010478-) Sheave, Flat, 1.8d 1.38w 0.67b	1
▲	25	32491	(010478-) Washer, Flt, .31 Std	7
▲	26	378964	(010478-) Bolt, Carriage, .38-16 X 2.00	1
27	50040	(003100-009091)	Kit, Replmt, Bearing,F/41646	2	
28	28010	(009092-010477)	Bearing, Ball, 0.62b 1.38d 0.43w	2	
29	29091	(009092-010477)	Sleeve	2	
30	50115	(003100-010488)	Kit, Replmt, Arm F/ 41834,5 & 42	1	
31	18136	(003100-010488)	Ring, Retaining, Ext, 0.62d, Basic	2	
32	61487	(003100-010477)	Kit, Replmt, Idler, F/31230/1/2	1	
33	01513	(003100-010477)	Ring, Retaining, Int, 1.38d, Basic	1	
▽	41871	(003100-	) Tire Assy, Solid, 08.0x2.0 , W/ Brg	1
▲	34	29091	(003100-) Sleeve	2
▲	35	28010	(003100-) Bearing, Ball, 0.62b 1.38d 0.43w	2
▲	36	50111	(003100-) Tire Assy, Solid, 08.0x2.0 1.37b	1
▲	37	41504	(003100-) Tube, Steel	1
▲	38	45872	(003100-) Screw, Hex, .50-13 X 6.50, 2, Unpl	1
▲	39	32486	(003100-) Washer, Flt, .50 Sae	4
40	41831	(003100-xxxxxx)	Plate, Spring (Replaced by none)	1	
41	23279	(003100-	) Belt, Ribbed, [J14], 24.0l	1
42	25997	(008513-	) Arm, Clutch, Propel, Lh	1
43	41559	(003100-005101)	Sheave, [3l], 1grv, 01.6pd 0.62b	1	
43	16925	(005102-	) Sheave, [3l], 1grv, 01.6pd 0.62b	1
44	378964	(010489-	) Bolt, Carriage, .38-16 X 2.00	1
45	50114	(010489-	) Sleeve	1
46	398356	(000000-	) Stop, Throttle	1
47	01333	(000000-	) Screw, Hex, #10-24 X 0.50, Sems	1
48	27977	(000000-	) Nut, Hex, Flng, #10-24	1

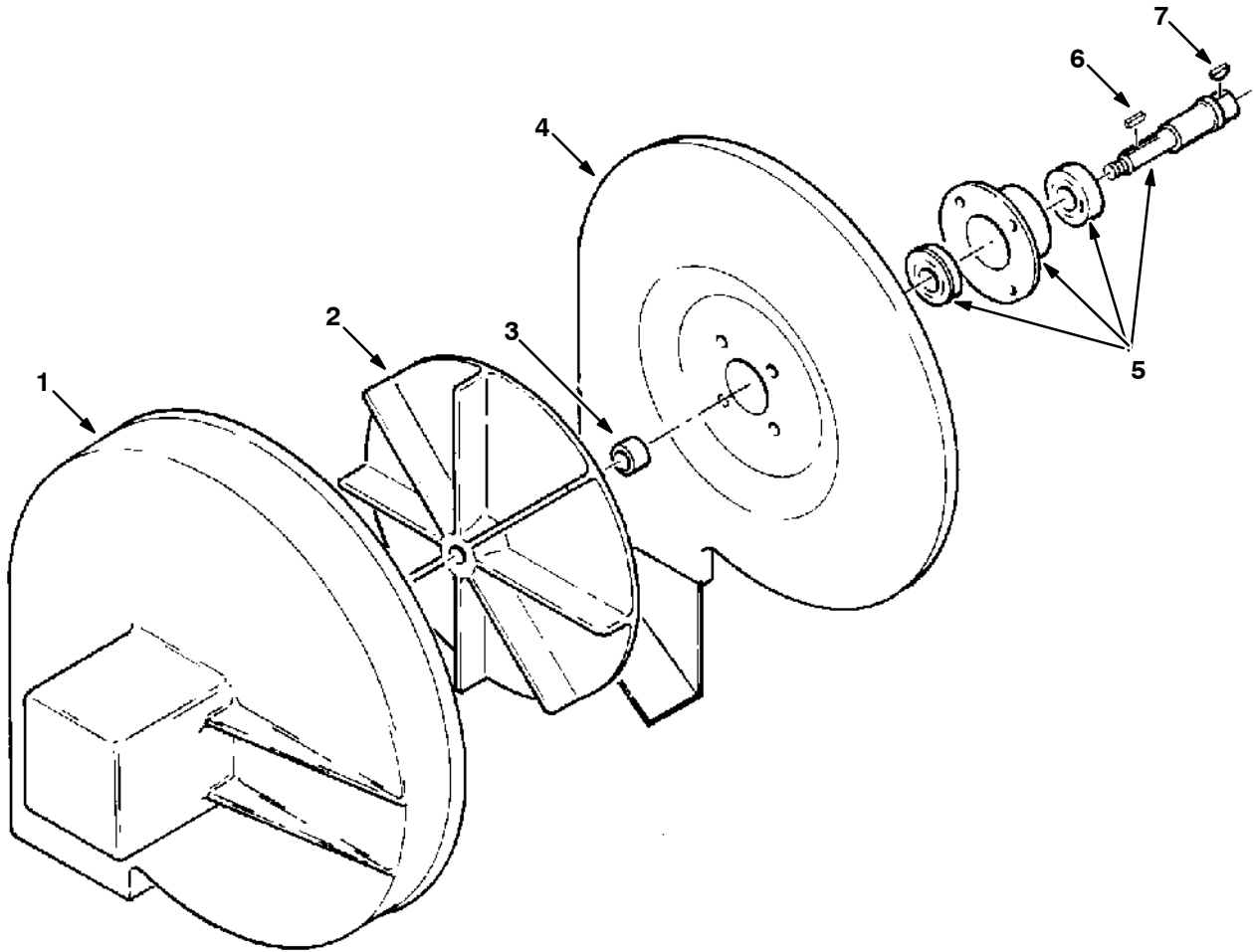


Fig. 8 - Vacuum Fan Group

02635

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	41351	(003100-	) Housing, Vacfan, Rear, 9.0d, Impeller	1
2	08143	(003100-	) Impeller, 9.00d X 0.376b	1
3	10362	(003100-	) Spacer	1
4	41582	(003100-	) Panel Wldt, Backing, Vacfan	1
5	SK2764	(003100-005101	) Kit, Replmt, Sheave, Fan	1
5	16934	(005102-	) Shaft	1
6	00960	(003100-	) Key, Sq, 0.12 X 0.12, 00.50l	1
7	00500-4	(003100-	) Key, Woodruff, 0.12 0.50, [Asa#0404]	1

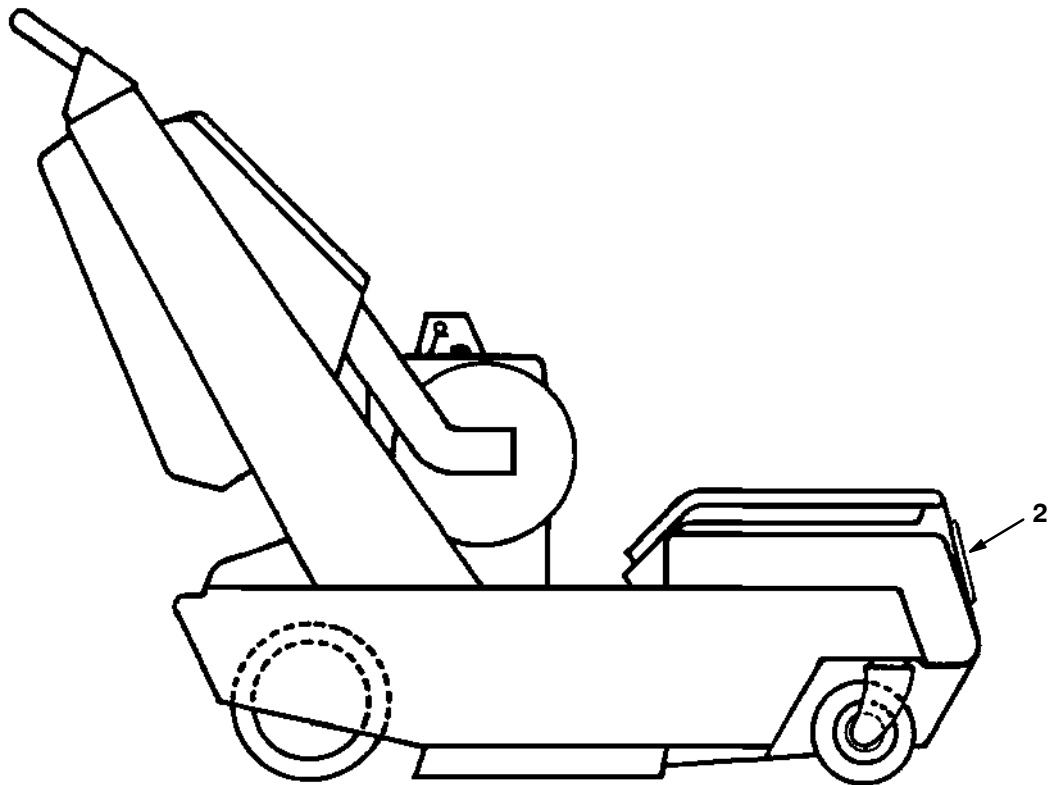
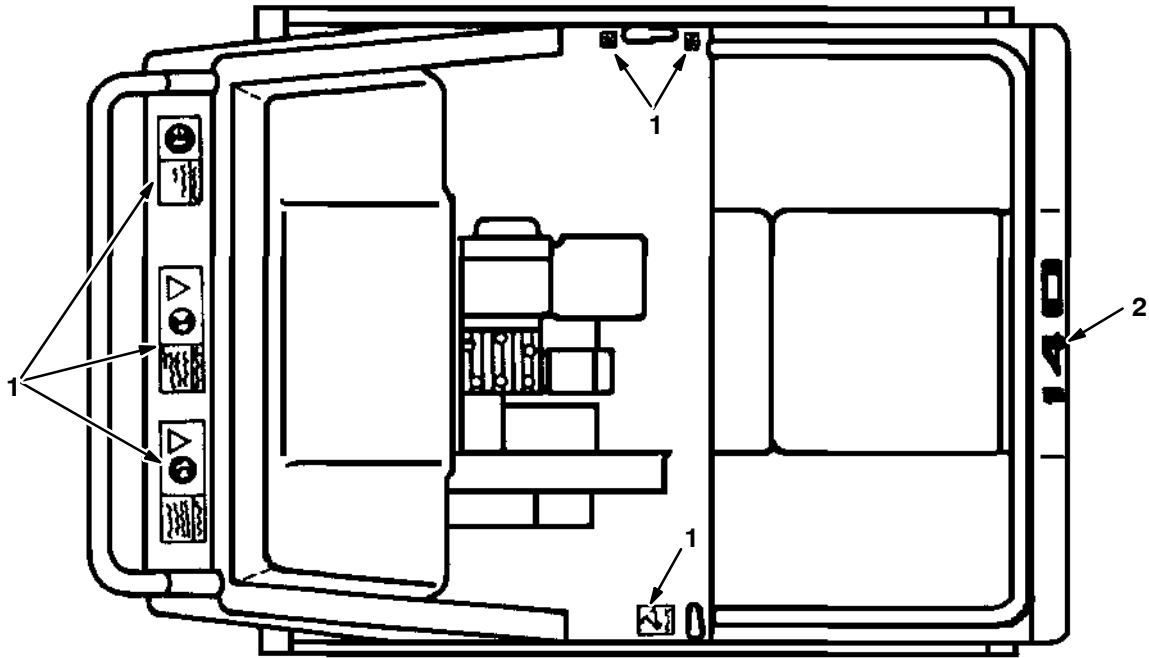


Fig. 9 - Label Kit

04654

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
▽ 1	02576	(003100-)	Kit, Replmt, Label, Complt, [140]	1
▲ 2	61060	(003100-005426)	Label, Numerals, [140/E] Bl-Gr	1
▲ 2	02560	(005427-)	Label, Numerals, [140/E] Black	1

SECTION 7

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NOTE: SECTION 7, OPTIONS, lists repair parts included as part of the available options.

OPTIONS

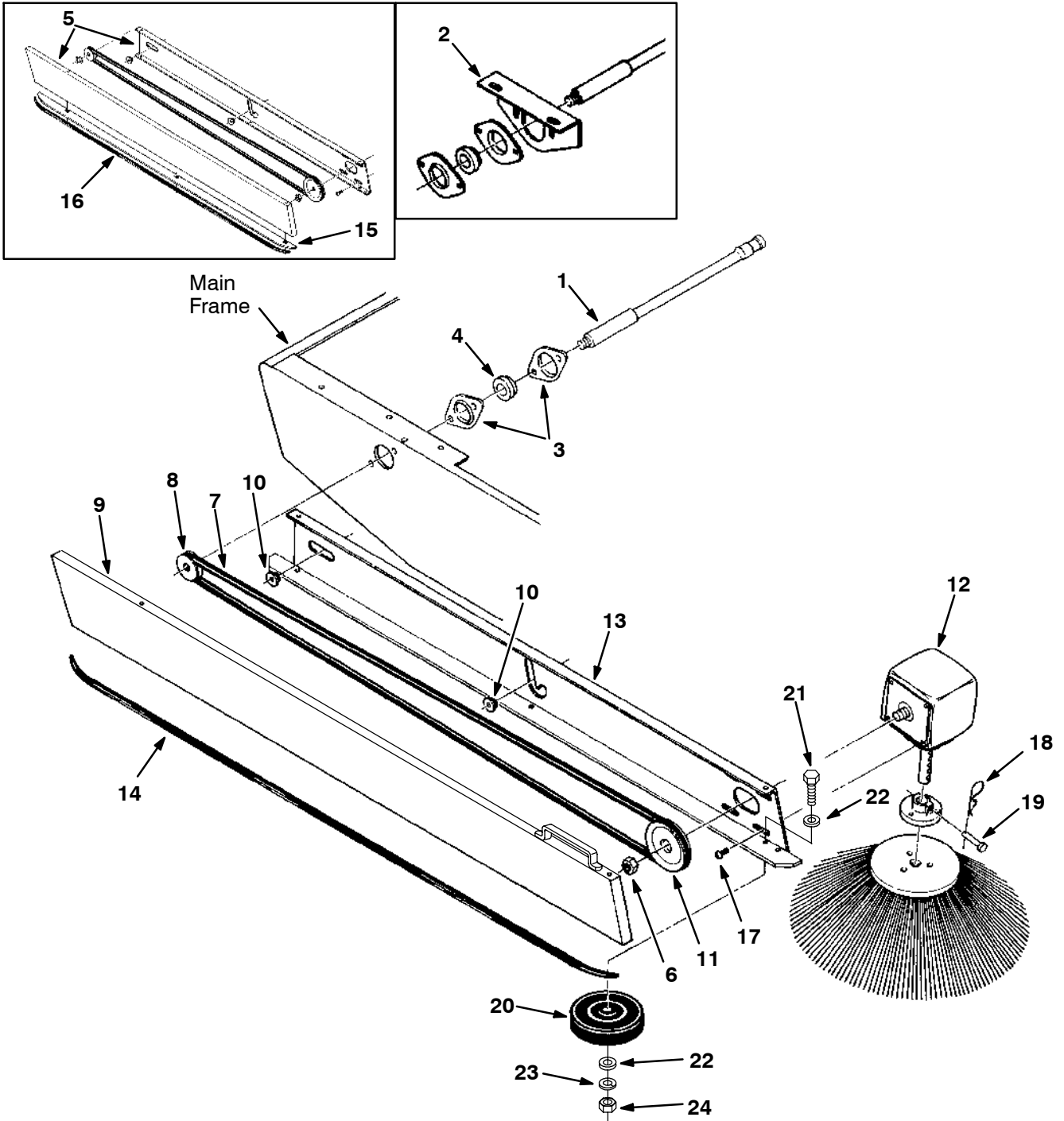


Fig. 1 - Side Brush Group

Fig. 1 - Side Brush Group

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	48451	(003100-	) Shaft, Drive, Brush, Side	1
2	48423	(003100-010239	) Plate, Mtg, Bracket	1
3	48636	(003100-	) Flange, Brg, 1.5id 2h	2
4	48635	(003100-	) Bearing, W/ Collar, 0.63b 1.57d 1.12w	1
5	07894	(003100-008426	) Arm, Brush, Side	1
6	39562	(003100-	) Nut, Hex, Jam, .38-16, Lh	1
7	41678	(003100-	) Belt, V, [3l] 80.0l	1
8	48452	(003100-	) Sheave, [3l], 1grv, 01.4pd .38-16	1
9	07890	(008427-	) Cover Wldt, Brush Arm	1
10	01047	(003100-	) Retainer	2
11	07872	(003100-	) Sheave, [3l], 1grv, 02.9pd .38-16	1
12	41731	(003100-	) Gearbox, 90, :1ratio, Brush, Side	1
13	07891	(008427-	) Arm, Brush, Side	1
14	07887	(008427-	) Molding, Trim, .08-.11 39.20	1
15	41927	(003100-008426	) Bumper, Side Brush	1
16	62595-14	(003100-008426	) Molding, Trim, .08-.11 44.00	1
17	41708	(003100-	) Screw, Btn, .25-20 X 0.62, NI	4
18	08085	(003100-	) Pin, Hair Cotter, 0.31 D .058 Wir	1
19	15173	(003100-	) Pin, Clevis, 0.25 D X 1.25l	1
▽	04188	(003100-	) Wheel Assy, 4.0d 0.81w	1
▲	20 23295	(003100-	) Wheel, 4.0d 0.81w 0.25b	1
▲	21 39528	(003100-	) Screw, Hex, .25-20X2.00, 5	1
▲	22 32490	(003100-	) Washer, Flat, 0.25 Std	2
▲	23 32982	(003100-	) Washer, Lock, Int, .25	1
▲	24 19312	(003100-	) Nut, Hex, Std, M10X1.5	1

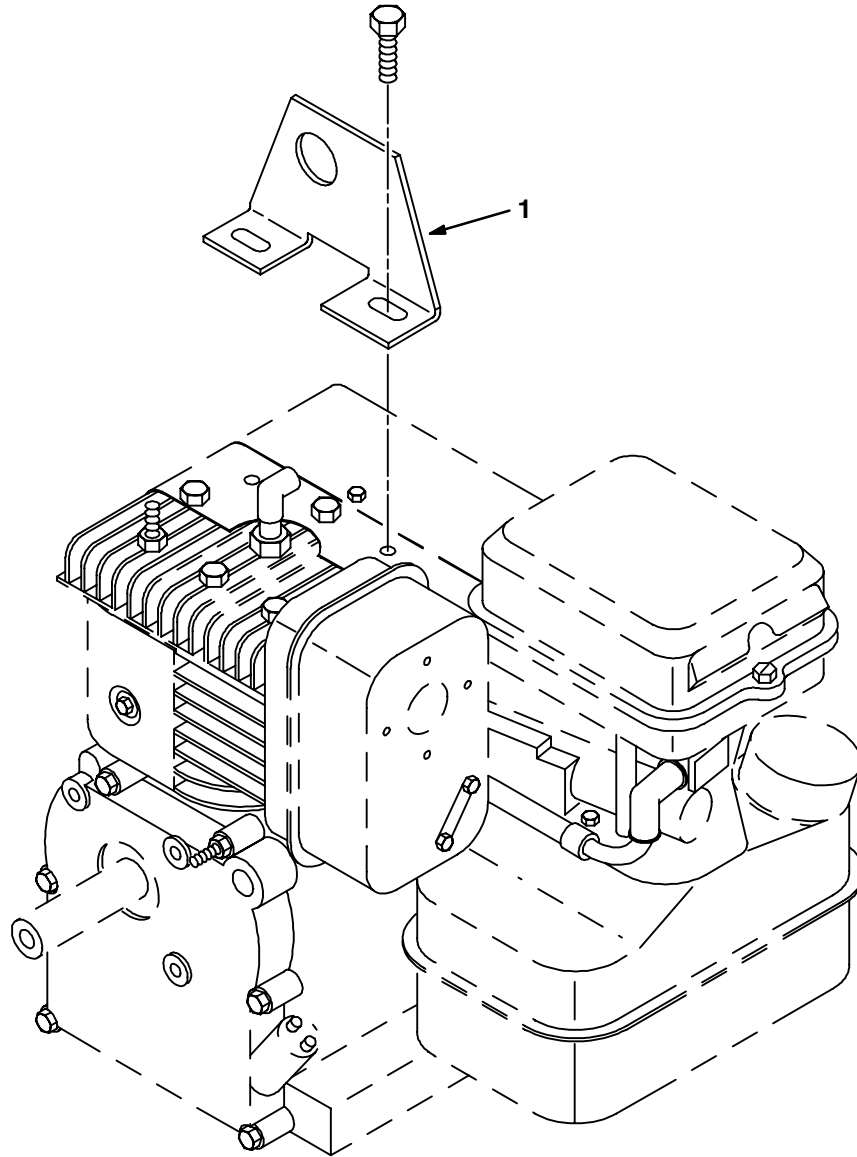


Fig. 2 - Lifting Bracket

08071

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	41846	(003100-)	Bracket, Lift	1

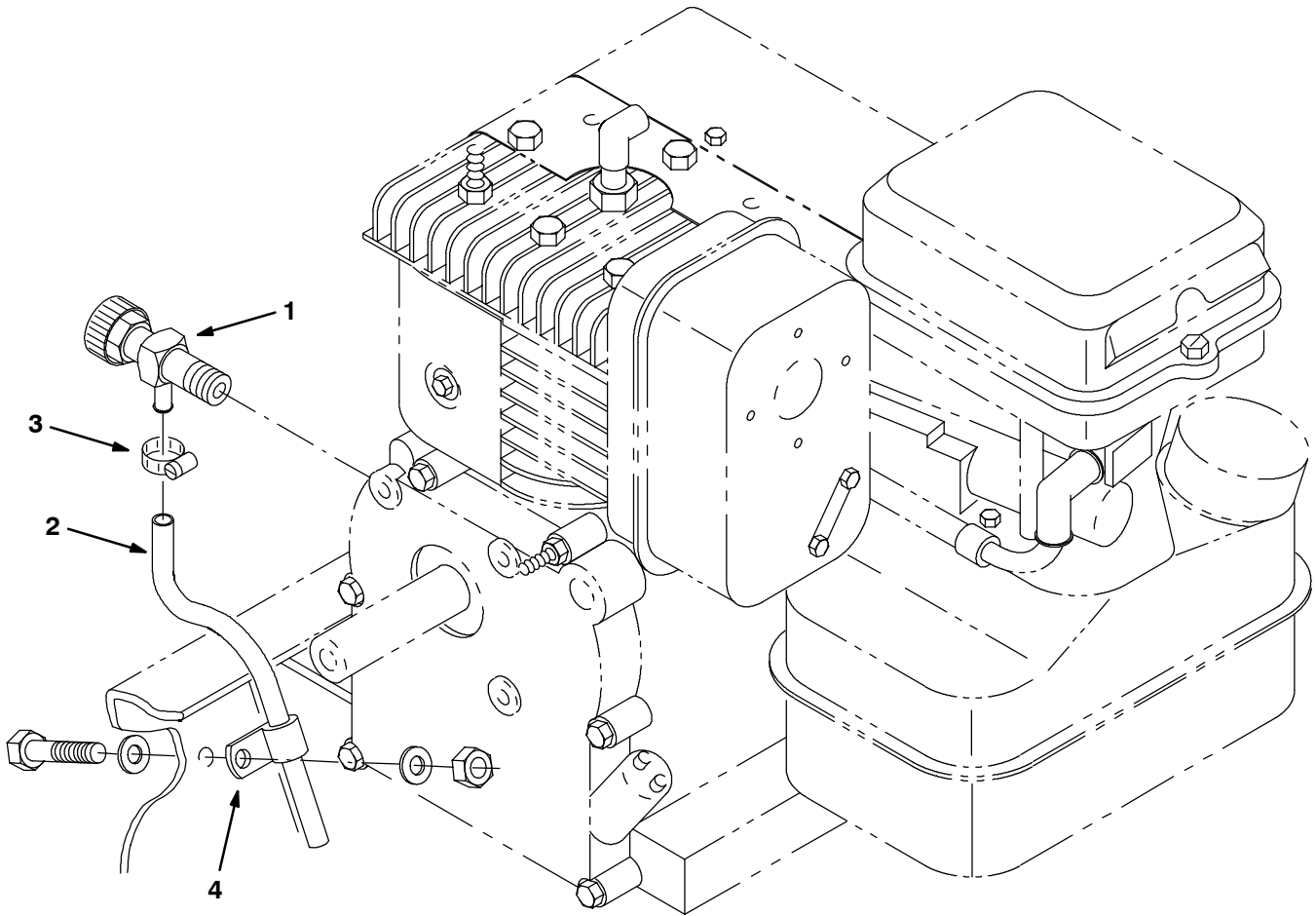


Fig. 3 - Oil Drain Kit

08071

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
▽	23263	(003100-	) Kit, Conv, Drain, Eng Oil	1
▲	1 23262	(003100-	) Fitting, Draincock Pm /Bm05	1
▲	2 87730	(003100-	) Hose, Fuel, 0.31id 12.0l	1
▲	3 43844	(003100-	) Clamp, Hose, Wormdrive, 0.25-0.62d	1
▲	4 26395-1	(003100-	) Clamp, Cable, Stl, 0.56d X 0.38w, 1h	1

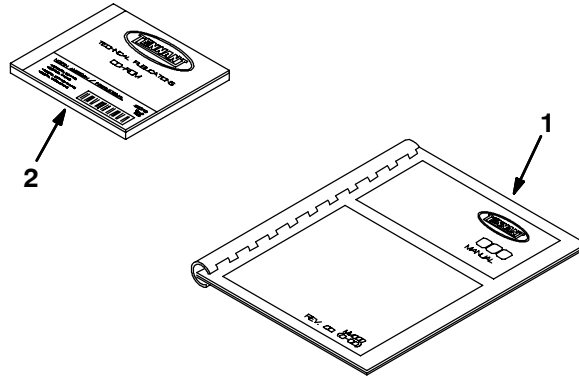


Fig. 4 - Documentation Group

07501

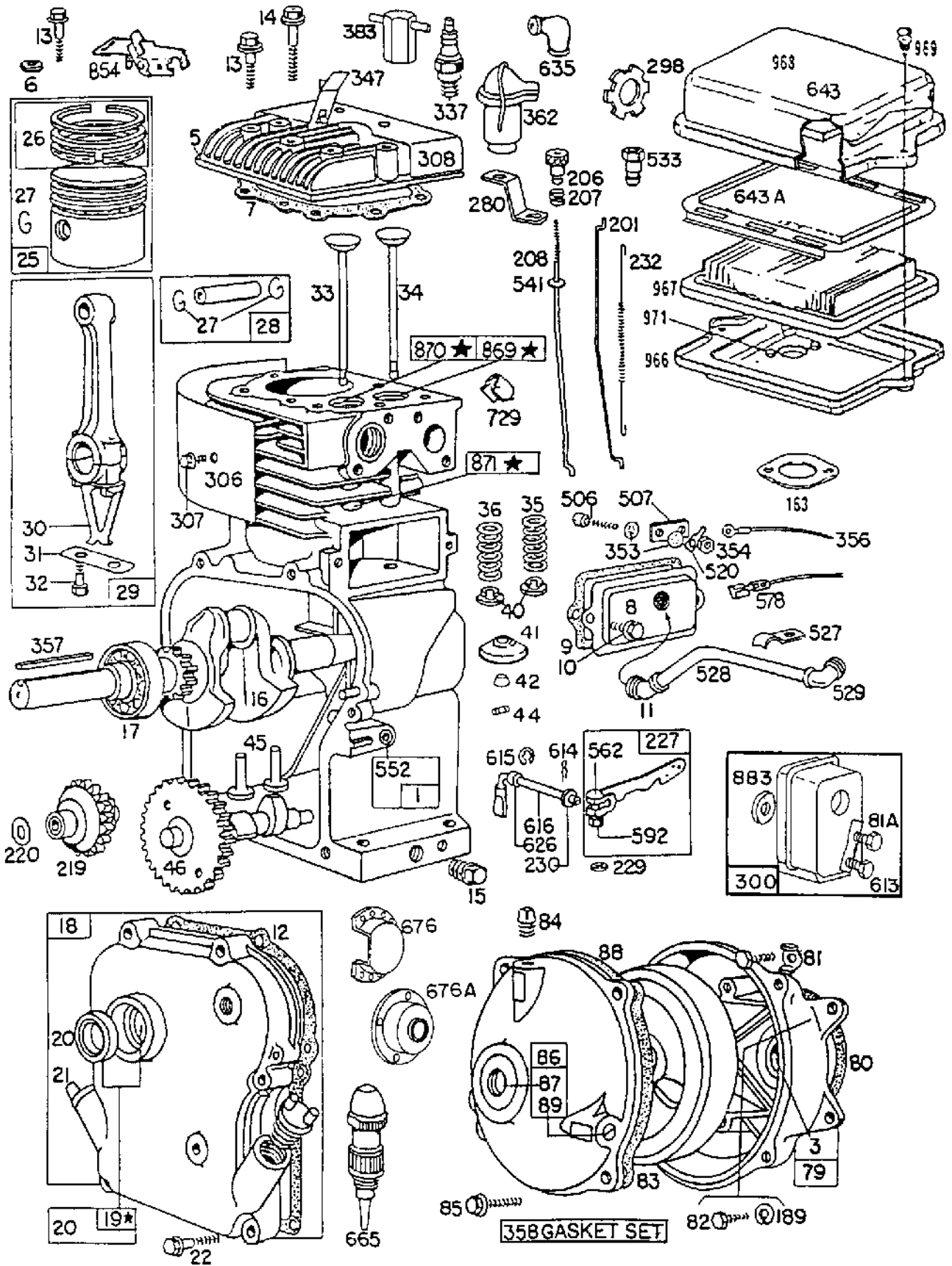
Ref.	Tenant Part No.	Machine Serial Number	Description	Qty.
1	MM130	(003100-)	Manual Pkg, [140 Gas Na 003100-]	1
2	330710	(003100-)	Manual, Cd-Rom, Oprtr & Parts, All (Na)	1

SECTION 8

CONTENTS

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Fig. 1 - Engine Breakdown	8-2

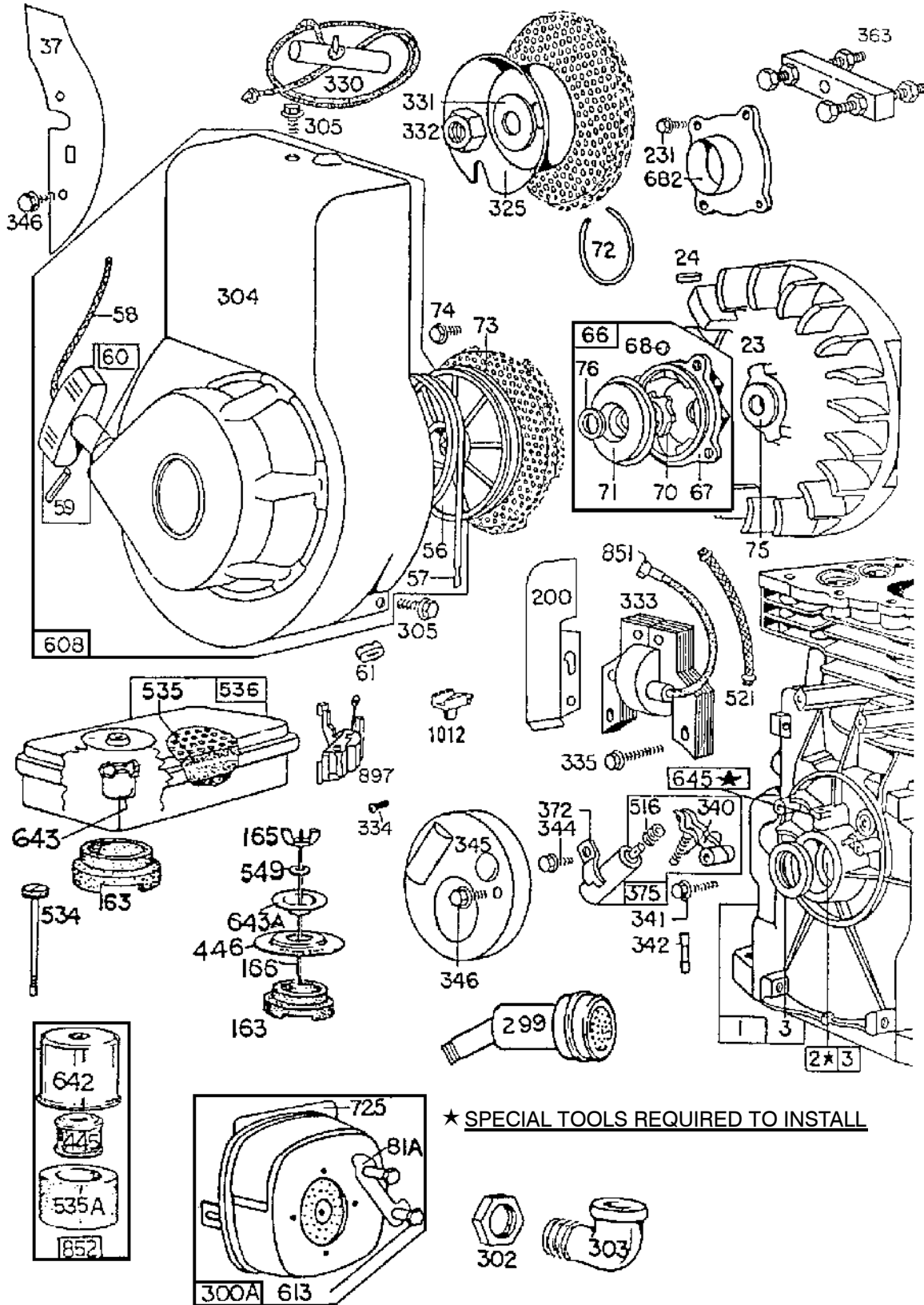
NOTE: SECTION 8, ENGINE PARTS, GASOLINE, lists repair parts for gasoline powered engines, TENNANT part number 41861, 41515, 19846, 16489, 02590, 09906, 50062, 70183, 70065 and 48768.



★ SPECIAL TOOLS REQUIRED TO INSTALL

Assemblies include all parts shown in frames.

Fig. 1 - Engine Breakdown



Assemblies include all parts shown in frames.

Fig. 1 - Engine Breakdown

Fig. 1 - Engine Breakdown

Ref.	Tennant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
1		392857	(003100-004030)	Cylinder Assembly	1
1		391974	(004031-004554)	Cylinder Assembly	1
1		394819	(004555-004821)	Cylinder Assembly	1
1		395970	(004822-009270)	Cylinder Assembly	1
1		395567	(009271-)	Cylinder Assembly	1
2		293708	(003100-004030)	Bushing, Cylinder	1
2		297565	(004031-004554)	Bushing, Cylinder	1
2		293708	(004554-009270)	Bushing, Cylinder	1
2		299269	(009271-)	Bearing	1
3	38764	299819	(003100-004554)	Seal, Oil	1
3	09927	393862	(004555-009270)	Seal, Oil	1
3		299819	(009270-)	Seal, Oil	1
5		211851	(003100-004030)	Head, Cylinder	1
5		211127	(004031-004554)	Head, Cylinder	1
5		211851	(004555-008036)	Head, Cylinder	1
5		213141	(008037-009270)	Head, Cylinder	1
5		210812	(009271-)	Head, Cylinder	1
6		22963	(003100-008036)	Washer	1
7	09907	270836	(003100-004030)	Gasket, Cylinder Head	1
7		270383	(004031-004554)	Gasket, Cylinder Head	1
7	09907	270836	(004555-009270)	Gasket, Cylinder Head	1
7		272167	(009271-)	Gasket, Cylinder Head	1
8		294178	(003100-)	Breather, Valve Chamber	1
9		27549	(003100-)	Gasket, Valve Cover	1
10		93394	(003100-)	Screw, Breather Mounting	1
11		66578	(003100-)	Grommet, Breather Tube	1
12		270833	(003100-004030)	Gasket, Crankcase, 0.015 in (0.38 mm)	1
12		270125	(004031-004554)	Gasket, Crankcase, 0.005 in (0.13 mm)	1
12		270126	(004031-004554)	Gasket, Crankcase, 0.009 in (0.23 mm)	1
12		270080	(004031-004554)	Gasket, Crankcase, 0.015 in (0.38 mm)	1
12		270895	(004555-)	Gasket, Crankcase, 0.005 in (0.13 mm)	1
12		270896	(004555-)	Gasket, Crankcase, 0.009 in (0.23 mm)	1
12		270833	(004555-)	Gasket, Crankcase, 0.015 in (0.38 mm)	1
13		93111	(003100-004030)	Screw, Cylinder Head, 1.9 in (48 mm)	1
13		93368	(004031-004554)	Screw, Cylinder Head, 1.9 in (48 mm)	1
13		93111	(004555-)	Screw, Cylinder Head, 1.9 in (48 mm)	1
14		93369	(004031-004554)	Screw, Cylinder Head, 2.9 in (75 mm)	1
15		91249	(003100-)	Plug, Pipe	1
16	38434	261405	(003100-004030)	Crankshaft	1
16		260721	(004031-004554)	Crankshaft	1
16	38434	261405	(004555-008036)	Crankshaft	1
16		261414	(008037-009270)	Crankshaft	1
16		397252	(009271-)	Crankshaft	1
17		99158	(003100-)	Bearing, Ball	1
18		392975	(003100-004030)	Cover Assembly, Crankcase	1
18		298204	(004031-004554)	Cover Assembly, Crankcase	1
18		395259	(004555-)	Cover Assembly, Crankcase	1
19		293708	(003100-004030)	Bushing Assembly, Crankcase Cover	1
19		297603	(004031-004554)	Bushing Assembly, Crankcase Cover	1

ENGINE PARTS

Ref.	Tennant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
28		297581	(004031-004554)	Pin Assembly, Piston, Standard	1
28		297582	(004031-004554)	Pin Assembly, Piston, 0.005 in O.S.	1
28		391649	(004555-009270)	Pin Assembly, Piston, Standard	1
28		394861	(004555-009270)	Pin Assembly, Piston, 0.005 in O.S.	1
28		298909	(009271-)	Pin Assembly, Piston, Standard	1
28		298908	(009271-)	Pin Assembly, Piston, 0.005 in O.S.	1
29		392939	(003100-004030)	Rod Assembly, Connecting	1
29		297569	(004031-004554)	Rod Assembly, Connecting	1
29		392939	(004555-009270)	Rod Assembly, Connecting	1
29		294367	(009271-)	Rod Assembly, Connecting	1
30		220670	(003100-004030)	Dipper, Connecting Rod	1
30		221786	(004031-004554)	Dipper, Connecting Rod	1
30		220670	(004555-)	Dipper, Connecting Rod	1
31		222390	(003100-004030)	Lock, Connecting Rod Screw	1
31		221741	(004031-004554)	Lock, Connecting Rod Screw	1
31		222390	(004555-004821)	Lock, Connecting Rod Screw	1
31		222282	(004822-)	Lock, Connecting Rod Screw	1
32		93670	(003100-004030)	Screw, Connecting Rod	1
32		93450	(004031-004554)	Screw, Connecting Rod	1
32		93670	(004555-009270)	Screw, Connecting Rod	1
32		94404	(009271-)	Screw, Connecting Rod	1
33		212004	(003100-004030)	Valve, Exhaust	1
33		211119	(004031-004554)	Valve, Exhaust	1
33		212004	(004555-009270)	Valve, Exhaust	1
33		296676	(009271-)	Valve, Exhaust	1
34		261233	(003100-004030)	Valve, Intake	1
34		261044	(004031-004554)	Valve, Intake	1
34		261233	(004555-009270)	Valve, Intake	1
34		296677	(009271-)	Valve, Intake	1
35		260552	(003100-)	Spring, Intake Valve	1
36		26478	(003100-009270)	Spring, Exhaust Valve	1
36		26826	(009271-)	Spring, Exhaust Valve	1
37		222403	(003100-004030)	Guard, Flywheel	1
37		222443	(004031-004554)	Guard, Flywheel	1
37		222403	(004555-004821)	Guard, Flywheel	1
37		223087	(004822-009270)	Guard, Flywheel	1
37		220971	(009271-)	Guard, Flywheel	1
40		93312	(003100-)	Retainer, Valve Spring	1
41		292259	(009271-)	Rotocap, Exhaust Valve	1
42		230127	(009271-)	Retainer, Exhaust Valve	1
44		230126	(009271-)	Pin, Exhaust Valve	1
45		261250	(003100-004030)	Tappet, Valve	1
45		260642	(004031-004554)	Tappet, Valve	1
45		261250	(004555-009270)	Tappet, Valve	1
45		230173	(009271-)	Tappet, Valve	1
46		392171	(003100-004030)	Gear, Cam	1
46		211117	(004031-004554)	Gear, Cam	1
46		392171	(004555-009270)	Gear, Cam	1
46		394800	(009271-)	Gear, Cam	1
52		392854	(003100-004030)	Gasket, Intake Elbow Mounting	2
52	37867	27355	(004031-004554)	Gasket, Intake Elbow Mounting	2

Ref.	Tennant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
19		293708	(004555-	Bushing Assembly, Crankcase Cover	1
20	38767	393812	(003100-004554)	Seal, Oil	1
20	09927	393862	(004555-004821)	Seal, Oil	1
20	38767	393812	(004822-008036)	Seal, Oil	1
20	09927	393862	(008037-009270)	Seal, Oil	1
20		393812	(009271-	Seal, Oil	1
21	37564	66768	(003100-	Plug, Oil Filler	1
22		93032	(003100-	Screw, Crankcase	1
23		296884	(003100-004030)	Flywheel, Magneto	1
23		399673	(004031-004554)	Flywheel, Magneto	1
23		394413	(004555-009270)	Flywheel, Magneto	1
23		296884	(009271-	Flywheel, Magneto	1
24	37554	61760	(003100-004821)	Key, Flywheel	1
24	09908	222698	(004822-	Key, Flywheel	1
25		391650	(003100-004030)	Piston Assembly, Standard	1
25		391651	(003100-004030)	Piston Assembly, 0.010 in O.S.	1
25		391652	(003100-004030)	Piston Assembly, 0.020 in O.S.	1
25		391653	(003100-004030)	Piston Assembly, 0.030 in O.S.	1
25		298168	(004031-004554)	Piston Assembly, Standard	1
25		298169	(004031-004554)	Piston Assembly, 0.010 in O.S.	1
25		298170	(004031-004554)	Piston Assembly, 0.020 in O.S.	1
25		298171	(004031-004554)	Piston Assembly, 0.030 in O.S.	1
25		391650	(004555-009270)	Piston Assembly, Standard	1
25		391651	(004555-009270)	Piston Assembly, 0.010 in O.S.	1
25		391652	(004555-009270)	Piston Assembly, 0.020 in O.S.	1
25		391653	(004555-009270)	Piston Assembly, 0.030 in O.S.	1
25		295455	(009271-	Piston Assembly, Standard	1
25		295456	(009271-	Piston Assembly, 0.010 in O.S.	1
25		295457	(009271-	Piston Assembly, 0.020 in O.S.	1
25		295498	(009271-	Piston Assembly, 0.030 in O.S.	1
26		391654	(003100-004030)	Ring Set, Standard, Piston	1
26		391656	(003100-004030)	Ring Set, 0.010 in O.S.	1
26		391658	(003100-004030)	Ring Set, 0.020 in O.S.	1
26		391660	(003100-004030)	Ring Set, 0.030 in O.S.	1
26		298174	(004031-004554)	Ring Set, Standard, Piston	1
26		298175	(004031-004554)	Ring Set, 0.010 in O.S.	1
26		298176	(004031-004554)	Ring Set, 0.020 in O.S.	1
26		298177	(004031-004554)	Ring Set, 0.030 in O.S.	1
26		391654	(004555-009270)	Ring Set, Standard, Piston	1
26		391656	(004555-009270)	Ring Set, 0.010 in O.S.	1
26		391658	(004555-009270)	Ring Set, 0.020 in O.S.	1
26		391660	(004555-009270)	Ring Set, 0.030 in O.S.	1
26		295657	(009271-	Ring Set, Standard, Piston	1
26		295658	(009271-	Ring Set, 0.010 in O.S.	1
26		295659	(009271-	Ring Set, 0.020 in O.S.	1
26		295660	(009271-	Ring Set, 0.030 in O.S.	1
27		26026	(003100-004030)	Lock, Piston Pin	1
27		260645	(004031-004554)	Lock, Piston Pin	1
27		26026	(004555-	Lock, Piston Pin	1
28		391649	(003100-004030)	Pin Assembly, Piston, Standard	1
28		394861	(003100-004030)	Pin Assembly, Piston, 0.005 in O.S.	1

ENGINE PARTS

Ref.	Tennant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
52		394732	(004555-008036)	Gasket, Intake Elbow Mounting	2
52		490522	(008037-009270)	Gasket, Intake Elbow	1
52		271936	(009271-)	Gasket, Intake Elbow	2
53		94523	(009271-)	Screw, Muffler	1
56	38360	280117	(003100-005223)	Pulley, Rewind Starter	1
56		280439	(005224-)	Pulley, Rewind Starter	1
57	09909	490179	(003100-)	Spring, Rewind Starter	1
58	38370	66734	(003100-)	Rope, Starter	1
59	38671	230228	(003100-005223)	Pin, Starter Grip	1
59		396892	(005224-)	Insert, Starter Grip	1
60	39039	393152	(003100-)	Grip, Starter Rope	1
61		68618	(004031-004554)	Bumper, Starter Pulley	1
66		399671	(003100-004554)	Clutch Assembly, Rewind Starter	1
66		394588	(004555-005223)	Clutch Assembly, Rewind Starter	1
66	09911	399671	(005224-)	Clutch Assembly, Rewind Start	1
67		211383	(003100-004030)	Housing, Starter Clutch	1
67		212131	(004031-004554)	Housing, Starter Clutch	1
67		394897	(004555-)	Housing, Starter Clutch	1
68		63770	(003100-)	Ball, Clutch	1
70		298799	(003100-004821)	Ratchet, Rewind Starter	1
70		298436	(008037-)	Ratchet, Rewind Starter	1
71		221653	(003100-)	Washer, Clutch Retainer	1
72		26032	(004031-004554)	Spring, Clutch Retainer	1
73		221661	(003100-)	Screen, Rotating	1
74		93490	(003100-)	Screw, Rotating Screen Mounting	1
75		220865	(003100-)	Washer, Spring	1
76		68238	(003100-004030)	Washer, Ratchet Sealing	1
76		270045	(004031-004554)	Washer, Ratchet Sealing	1
76		68238	(004555-)	Washer, Ratchet Sealing	1
79		290779	(004031-004554)	Case Assembly, Gear	1
79		290779	(008037-)	Case Assembly, Gear	1
80		27667	(004031-004554)	Gasket, Gear Case	1
80		27667	(008037-)	Gasket, Gear Case	1
81		220234	(004031-004554)	Lock, Screw	1
81		220234	(008037-)	Lock, Screw	1
81A		222263	(004031-004554)	Lock	1
81A		220234	(009271-)	Lock	1
82		91541	(004031-004554)	Screw, Cap	1
82		91541	(008037-)	Screw, Cap	1
83		211338	(004031-004554)	Shaft And Gear, Drive	1
83		211293	(008037-)	Shaft And Gear, Drive	1
84		92617	(004031-004554)	Plug, Breather	1
84		92617	(008037-)	Plug, Breather	1
85		92747	(004031-004554)	Screw	1
85		92747	(008037-)	Screw	1
86		291730	(004031-004554)	Cover Assembly, Gear Case	1
86		291730	(008037-)	Cover Assembly, Gear Case	1
87		19011	(004031-004554)	Seal, Oil	1
87		19011	(008037-)	Seal, Oil	1
88		27313	(004031-004554)	Gasket, Gear Case Cover	1
88		27313	(008037-)	Gasket, Gear Case Cover	1

Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
89		93448	(004031-004554)	Plug, Oil Drain	1
89		93448	(008037-)	Plug, Oil Drain	1
90		394083	(003100-004030)	Carburetor Assembly	1
90	38049	299437	(004031-004554)	Carburetor Assembly	1
90		94828	(004555-005223)	Carburetor Assembly	1
90		398124	(005224-008036)	Carburetor Assembly	1
90	09926	490825	(008037-009270)	Carburetor Assembly	1
90	50073	490524	(009271-)	Carburetor Assembly	1
95		93499	(003100-)	Screw, Throttle Valve Mounting	1
96		211203	(003100-008036)	Valve, Throttle	1
96		223793	(008037-)	Valve, Throttle	1
97		392629	(003100-004030)	Shaft And Lever, Throttle	1
97		297468	(004031-008036)	Shaft And Lever, Throttle	1
97		490048	(008037-009270)	Shaft And Lever, Throttle	1
97		490371	(009271-)	Shaft And Lever, Throttle	1
99		490956	(009271-)	Spring	1
108		397134	(003100-008036)	Valve, Choke	1
108		490495	(008037-)	Valve, Choke	1
110		221226	(003100-008036)	Washer, Choke Lever	1
111		94060	(003100-008036)	Washer, Wavy	1
112		39686	(003100-008036)	Screw, Choke Lever	1
114		66594	(003100-008036)	Gasket, Needle Valve Nut	1
116		65978	(003100-008036)	Packing, Needle Valve	1
117		230590	(003100-008036)	Nut, Needle Valve	1
118		23433	(003100-008036)	Valve, Needle	1
118		231533	(008037-)	Valve, Needle	1
124		93357	(003100-)	Screw, Hex. Hd.	1
127		22831	(005224-008036)	Plug, Welch	1
127		220352	(008037-)	Plug, Welch	1
147		230591	(003100-008036)	Seat, Needle Valve	1
148		22235	(003100-008036)	Washer, Needle Valve	2
149		26336	(003100-)	Spring, Needle Valve	1
152		260746	(003100-004030)	Spring, Speed And Throttle Adjustment	1
152		260575	(004031-)	Spring, Speed And Throttle Adjustment	1
153		392922	(003100-004030)	Screw	1
153		490501	(002971-)	Screw	1
154		93527	(003100-)	Screw, Machine	1
156		222955	(003100-004030)	Lever, Speed Adjuster	1
156		223856	(009271-)	Lever, Speed Adjuster	1
163		27660	(003100-004030)	Gasket, Air Cleaner Mounting	1
163		271755	(004031-004554)	Gasket, Air Cleaner Mounting	1
163		27660	(004555-005223)	Gasket, Air Cleaner Mounting	1
163		271139	(005224-008036)	Gasket, Air Cleaner Mounting	1
163		271935	(008037-)	Gasket, Air Cleaner Mounting	1
165		93856	(004031-004554)	Nut, Wing	1
166		231176	(004031-004554)	Stud, Air Cleaner	1
166		231332	(005224-008036)	Stud, Air Cleaner	1
172		271077	(004031-004554)	Spacer, Air Cleaner	1
180		397789	(003100-004030)	Tank Assembly, Fuel	1
180		297600	(004031-004554)	Tank Assembly, Fuel	1
180		397869	(004555-008036)	Tank Assembly, Fuel	1

ENGINE PARTS

Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
180		490527	(008037-009270)	Tank Assembly, Fuel	1
180		490502	(009271-	Tank Assembly, Fuel	1
181		297863	(003100-005223)	Cap, Fuel Tank	1
181		397567	(005224-008036)	Cap, Fuel Tank	1
181	08887		(008037-009270)	Cap, Fuel Tank	1
181		490075	(009271-	Cap, Fuel Tank	1
189		90366	(004031-004554)	Washer, Lock	1
189		90366	(008037-	Washer, Lock	1
190		93440	(004555-008036)	Screw, Fuel Tank Mounting	1
190		93341	(003100-004554)	Screw, Fuel Tank Mounting	1
190		94094	(008037-	Screw	1
191	37815	27911	(003100-005223)	Gasket, Fuel Tank Mounting	2
191		271592	(005224-008036)	Gasket, Fuel Tank Mounting	1
191		271928	(008037-	Gasket, Fuel Tank Mounting	1
200		392913	(003100-004030)	Blade, Governor	1
200		221480	(004031-004554)	Blade, Governor	1
200		490529	(009271-	Blade, Governor	1
201		261372	(003100-004030)	Link, Governor	1
201		260661	(004031-004554)	Link, Governor	1
201		261590	(004555-008036)	Link, Governor	1
201		262278	(008037-009270)	Link, Governor	1
201		262325	(009271-	Link, Governor	1
202		260678	(004031-008036)	Link, Throttle	1
202		262270	(008037-009270)	Link, Throttle	1
202		262470	(009271-	Link, Throttle	1
A					
203		393919	(004031-004554)	Crank, Bell	1
203		394670	(004555-008036)	Crank, Bell	1
203		280720	(008037-	Crank, Bell	1
204		230844	(004031-004554)	Bushing, Governor Control Lever	1
204		222962	(004555-008036)	Bushing, Governor Control Lever	1
204		230844	(004822-005223)	Bushing, Governor Control Lever	1
204		222962	(008037-	Bushing, Governor Control Lever	1
205		93838	(004031-008036)	Screw, Shoulder	1
205		23120	(008037-	Screw, Shoulder	1
206		230149	(004031-004554)	Nut	1
206		231266	(008037-	Nut	1
206		280012	(004031-004554)	Nut	1
A					
207		26855	(004031-	Spring, Control Rod	1
207		26855	(008037-	Spring, Control Rod	1
208		230737	(004031-004554)	Rod, Control	1
208		261597	(004555-008036)	Rod, Control	1
208		262323	(008037-	Rod, Control	1
209		260041	(003100-004030)	Spring, Governor	1
209		260695	(004031-004554)	Spring, Governor	1
209		260902	(004555-008036)	Spring, Governor	1
209		262285	(008037-009270)	Spring, Governor	1
209		262317	(009271-	Spring, Governor	1
216		299859	(004031-004554)	Link, Choke	1
216		262274	(008037-009270)	Link, Choke	1

Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
216		262359	(009271-	Link, Choke	1
217		260189	(004031-004554	Spring, Choke Link	1
217		262281	(009271-009270	Spring, Choke Link	1
219		391737	(004031-009270	Gear Assembly, Governor	1
220		221551	(004031-	Washer, Governor Gear	1
222		490648	(008037-	Plate, Control	1
223		221517	(004031-004554	Lever, Governor Control	1
223		223097	(004555-	Lever, Governor Control	1
224		93491	(004031-	Rivet	1
227		393920	(004031-004554	Lever Assembly, Governor	1
227		394541	(004555-008036	Lever Assembly, Governor	1
227		490454	(008037-	Lever Assembly, Governor	1
229		220680	(004031-004554	Washer, Governor Lever	1
230		222450	(004031-	Washer, Governor Lever	1
231		93064	(004031-004554	Screw	1
232		260478	(004031-004554	Spring, Governor Link	1
232		262310	(002971-	Spring, Governor Link	1
256		299859	(004031-004554	Crank, Bell	1
257		93263	(004031-004554	Screw	1
257		93543	(004031-004554	Screw	1
265		221535	(004031-004554	Clamp, Casing	1
265		221535	(008037-009270	Clamp, Casing	1
265		221370	(009271-	Clamp, Casing	1
267		93496	(004031-004554	Screw	1
267		93496	(008037-	Screw	1
268		66986	(004031-004554	Casing, Control Wire	1
269		26099	(004031-004554	Wire, Control	1
270		63426	(004031-004554	Locknut	1
271		290568	(004031-004554	Lever, Assembly Control	1
280		221384	(004031-004554	Strap, Control Rod	1
280		223236	(004822-008036	Strap, Control Rod	1
280		223798	(008037-	Guide, Control	1
298		220859	(003100-004030	Locknut, Muffler	1
298		261409	(004031-004554	Locknut, Muffler	1
298		220859	(004555-009270	Locknut, Muffler	1
298		220859	(009271-	Locknut, Muffler	1
299	09917	392811	(003100-004030	Muffler, Exhaust, Oval	1
299	38950	393368	(004031-004554	Muffler, Exhaust (Replaced by 09917)	1
299	09917	392811	(004555-009271	Muffler, Exhaust	1
299		492591	(009271-	Muffler, Exhaust	1
300		395959	(009271-	Muffler	1
300	38949	391313	(004031-004554	Muffler (Replaced by 09917)	1
A					
302		261409	(004031-004554	Locknut, Muffler	1
303	38337	91464	(004031-004554	Elbow, Exhaust	1
304		297663	(004031-004554	Housing, Starter	1
304		298572	(004031-004554	Housing, Blower	1
304		394451	(005224-008036	Housing, Blower	1
304		490174	(008037-009270	Housing, Blower	1
304		491117	(009271-	Housing, Blower	1
305		93158	(003100-	Screw	1

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Ref.	Tennant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
306		222681	(003100-004030)	Shield, Cylinder	1
306		221511	(004031-004554)	Shield, Cylinder	1
306		223086	(004555-009270)	Shield, Cylinder	1
306		224377	(009271-)	Shield, Cylinder	1
307		93042	(003100-004554)	Screw, Cylinder Shield Mounting	1
307		93490	(004555-)	Screw, Cylinder Shield Mounting	1
308		222679	(003100-004030)	Cover, Cylinder Head	1
308		221512	(004031-004554)	Cover, Cylinder Head	1
308		223085	(004555-009270)	Cover, Cylinder Head	1
308		223390	(009271-)	Cover, Cylinder Head	1
332		92284	(009271-)	Nut, Flywheel	1
333		298502	(003100-004030)	Armature, Magneto	1
333		298316	(004031-004554)	Armature, Magneto	1
333		298502	(004555-004821)	Armature, Magneto	1
333	09922	397316	(004822-)	Armature, Magneto	1
334		93381	(003100-004030)	Screw, Armature Mounting	1
334		93381	(004555-)	Screw, Armature Mounting	1
335		93414	(004031-004554)	Screw, Armature	1
337	45770-4	298809	(003100-)	Plug, Spark	1
337		293918	(003100-009270)	Plug, Spark, Resister	1
337	09913	298809	(009271-)	Plug, Spark, Resister	1
340		26018	(003100-004821)	Spring, Breaker Arm	1
341		93381	(003100-004821)	Screw	1
342		65704	(003100-004821)	Plunger, Breaker Point	1
344		93042	(003100-004821)	Screw, Condenser Clamp Mounting	1
345		220366	(003100-004821)	Cover, Breaker Point And Condenser	1
346		93705	(003100-)	Screw	1
347		293739	(003100-004030)	Switch, Stop	1
347		220884	(004031-004554)	Switch, Stop	1
347		293739	(004555-008036)	Switch, Stop	1
348		296110	(009271-)	Plate, Stop Switch	1
353		92791	(004031-)	Washer, Lock	2
354		90576	(004031-004554)	Nut, Terminal	1
354		90576	(008037-)	Nut, Terminal	1
356		295413	(004031-004554)	Wire, Ground	1
356		398808	(008037-009270)	Wire, Ground	1
356		490346	(009271-)	Wire, Ground	1
357		91539	(003100-004554)	Key	1
357		91539	(008037-)	Key	1
358	38765	397147	(003100-004030)	Gasket Set	1
358		397145	(004031-004554)	Gasket Set	1
358	38765	397147	(004555-009270)	Gasket Set	1
358		397144	(009271-)	Gasket Set	1
362		291630	(004031-004554)	Shield, Spark Plug	1
363		19069	(003100-)	Puller, Flywheel (Optional)	1
372		220477	(003100-004821)	Clamp, Condenser	1
375		294628	(003100-004821)	Breaker Points And Condenser Set	1
383		89838	(004555-)	Wrench, Spark Plug	1
392		260455	(003100-008036)	Spring, Fuel Pump Diaphragm	1
392		262328	(008037-)	Spring, Fuel Pump	1
394	37866	270026	(003100-)	Diaphragm	1

Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
409		299837	(004031-004554)	Lever, Speed	1
414		220982	(004031-004554)	Washer	1
414		231325	(005224-008036)	Washer	1
414		221198	(009271-)	Washer	1
432		221377	(003100-)	Cap, Spring	1
433		93265	(003100-)	Pin, Diaphragm Cover	1
434		210959	(003100-)	Cover, Diaphragm	1
435		93141	(003100-)	Screw, Diaphragm Cover	1
445	38969	392308	(004031-004554)	Cartridge, Air Cleaner, Round Paper	1
445	03970	396424	(005224-008036)	Cartridge, Air Cleaner, Round Paper	1
446		22284	(004031-004554)	Base, Air Cleaner	1
446		222844	(005224-008036)	Base, Air Cleaner	1
454		296178	(004031-004554)	Housing, Fuel Pump Screen	1
467		212706	(005224-008036)	Knob, Choke Rod	1
467		391908	(004031-004554)	Knob, Choke Rod	1
467		280715	(008037-)	Knob, Choke Rod	1
473		93475	(004031-004554)	Screw	1
506		90200	(004031-004554)	Screw, Machine	1
506		90200	(008037-)	Screw	1
507		66895	(004031-004554)	Insulator	1
507		66895	(008037-)	Insulator	1
516		260374	(003100-004821)	Spring, Connector	1
520		93722	(004031-004554)	Terminal, Space	1
521		298529	(004031-004554)	Shielding, Ignition Cable	1
526		93343	(003100-)	Screw, Tank Bracket Mounting	1
527		221279	(003100-004030)	Clamp, Breather Tube	1
527		221514	(004031-004554)	Clamp, Breather Tube	1
527		221279	(004555-005223)	Clamp, Breather Tube	1
527		223786	(008037-)	Clamp, Breather Tube	1
528		230634	(003100-004030)	Tube, Breather	1
528		230722	(004031-004554)	Tube, Breather	1
528		230634	(004555-005223)	Tube, Breather	1
528		231383	(005224-008036)	Tube, Breather	1
528		231527	(008037-)	Tube, Breather	1
529		67608	(003100-004030)	Grommet, Breather Tube	1
529		67838	(004031-004554)	Grommet, Breather Tube	1
529		67608	(004555-005223)	Grommet, Breather Tube	1
529		67838	(008037-)	Grommet, Breather	1
533		30149	(004031-004554)	Nut, Control Rod	1
533		231266	(004555-008036)	Nut, Control Rod	1
534		93322	(003100-005223)	Screw, Air Cleaner	1
535	59493	27987	(003100-005223)	Element, Air Cleaner, Foam	1
535	09921	271933	(009271-)	Element, Air Cleaner, Foam	1
535		270979	(004031-004554)	Element, Air Cleaner, Foam Precleaner	1
A					
536		297036	(003100-005223)	Cleaner Assembly, Air	1
538		390756	(004031-004554)	Rod, Control	1
538		260683	(009271-)	Rod, Control	1
539		221372	(004031-004554)	Clip, Control Rod	1
539		260684	(009271-)	Clip, Control Rod	1
541		22398	(004031-004554)	Washer	1

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Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
542		92265	(004031-004554)	Screw	1
549		271118	(004031-004554)	Washer	1
552		231079	(004031-)	Bushing, Governor Shaft	1
562		92613	(004031-)	Bolt, Governor Lever	1
578		392750	(004031-004554)	Wire, Starter Switch	1
592		231082	(004031-)	Hex Nut	1
608		392910	(003100-004030)	Starter Assembly, Rewind	1
608		297854	(004031-004554)	Starter Assembly, Rewind	1
608		395662	(004555-008036)	Starter Assembly, Rewind	1
608		490455	(008037-)	Starter Assembly, Rewind	1
609	37949	260694	(004031-008036)	Spring, Throttle Link	1
611		391813	(003100-)	Fuel Pipe And Clip Assembly	1
612		296811	(003100-008036)	Pipe, Fuel	1
613		93704	(004031-004554)	Screw, Muffler	1
613		94042	(009271-)	Screw, Muffler	1
614		93306	(004031-)	Cotter, Hair Pin	1
615		93307	(004031-)	Retainer, E-Ring	1
616		231077	(004031-)	Crank, Governor	1
621		297472	(004031-004554)	Switch, Stop	1
621		396847	(008037-)	Switch, Stop	1
624		390383	(004031-004554)	Crank, Bell	1
626		230749	(004031-004554)	Spacer, Governor Crank	1
629		261094	(004031-004554)	Spring, Throttle Return	1
630		221425	(004031-004554)	Arm, Throttle	1
631		221427	(004031-004554)	Washer, Throttle Arm	1
634		270167	(003100-008036)	Washer, Throttle Shaft (Felt)	1
634		271853	(008037-)	Washer, Throttle Shaft	1
634		270382	(005224-008036)	Washer, Foam	1
A					
635		66538	(003100-)	Elbow, Spark Plug	1
642		222626	(004031-004554)	Cover, Air Cleaner	1
642		223306	(005224-008036)	Cover, Air Cleaner	1
642		222626	(004031-004554)	Cover, Air Cleaner	1
642		223306	(005224-008036)	Cover, Air Cleaner	1
643		221321	(003100-004030)	Cup, Air Cleaner	1
643		222991	(004555-004821)	Cup, Air Cleaner	1
643		280374	(004821-005223)	Cup, Air Cleaner	1
643		280737	(009271-)	Retainer, Foam Element	1
643		222845	(004031-004554)	Cup, Air Cleaner	1
A					
643		280726	(009271-)	Retainer, Air Filter	1
A					
645		23513	(003100-004821)	Bushing, Plunger	1
665		298858	(004031-004554)	Oil, Minder	1
676	09919	393760	(003100-004030)	Deflector, Exhaust, Side Out (Optional)	1
676	61523	397931	(003100-004030)	Deflector, Exhaust, Straight Out	1
A					
676	61523	397931	(004555-)	Deflector, Exhaust, Straight Out	1
A					
679		270382	(008037-)	Washer, Foam	1
680		221839	(008037-)	Washer, Brass	1
681		299060	(003100-008036)	Needle Valve Kit	1

Ref.	Tenant Part No.	Briggs & Stratton Part No.	Machine Serial Number	Description	Qty.
682		211516	(004031-004554)	Shield, Clutch	1
725		221885	(004031-004554)	Shield, Heat	1
725		223867	(008037-	Shield, Heat	1
729		93708	(004031-004554)	Clip, Wire	1
729		221907	(004555-004821)	Clip, Wire	1
731		299419	(004031-004554)	Hood, Snow	1
733		93518	(004031-004554)	Screw, Hood	1
779		390383	(004031-004554)	Link, Bellcrank	1
780		222101	(004031-004554)	Anchor, Spring	1
851		221798	(003100-	Terminal, Ignition Cable	1
852		392368	(004031-004554)	Cleaner, Air, Assembly	1
852		396397	(005224-008036)	Cleaner, Air, Assembly	1
854		392884	(004031-004554)	Bracket Assembly, Stop Switch	1
864		492232	(009271-	Adapter Assembly, Muffler	1
869		210879	(003100-004030)	Seat, Intake Valve (Standard)	1
869		211158	(004031-004554)	Seat, Intake Valve (Standard)	1
869		210879	(004555-009270)	Seat, Intake Valve (Standard)	1
869		211172	(009271-	Seat, Intake Valve (Standard)	1
870		211291	(003100-004030)	Seat, Exhaust Valve (Standard)	1
870		211172	(004031-004554)	Seat, Exhaust Valve (Standard)	1
870		211291	(004555-	Seat, Exhaust Valve (Standard)	1
871		63709	(003100-	Guide, Exhaust Valve	1
871		231348	(003100-	Guide Intake Valve	1
883		270774	(009271-	Gasket, Muffler	1
897		394970	(004822-005223)	Trigger, Coil	1
		222060	(004031-004554)	Spacer, Starter Mounting	4
		230581	(004031-004554)	Nut, Starter Mounting	4
		299061	(004031-004554)	Housing, Blower	1
		66718	(004031-004554)	Washer, Thrust	1
916		280321	(008037-	Gear Rack, Governor	1
951		223286	(005224-008036)	Lever, Choke	1
966		490074	(008037-	Base, Air Cleaner	1
967	09920	399959	(008037-	Filter, Air Cleaner	1
968		223765	(008037-	Cover, Air Cleaner	1
969		490073	(008037-	Screw, Air Cleaner	1
971		94018	(008037-	Screw	1
987		398970	(008037-	Seal, Throttle Shaft	1
101		490507	(008037-	Retainer, Link	1
2	50067	397144	(000000-	Gasket Kit	1

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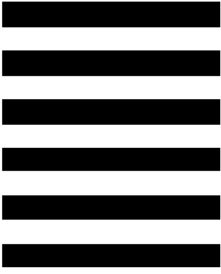
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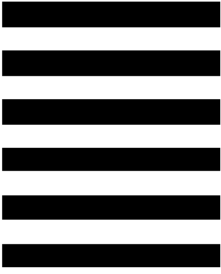
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