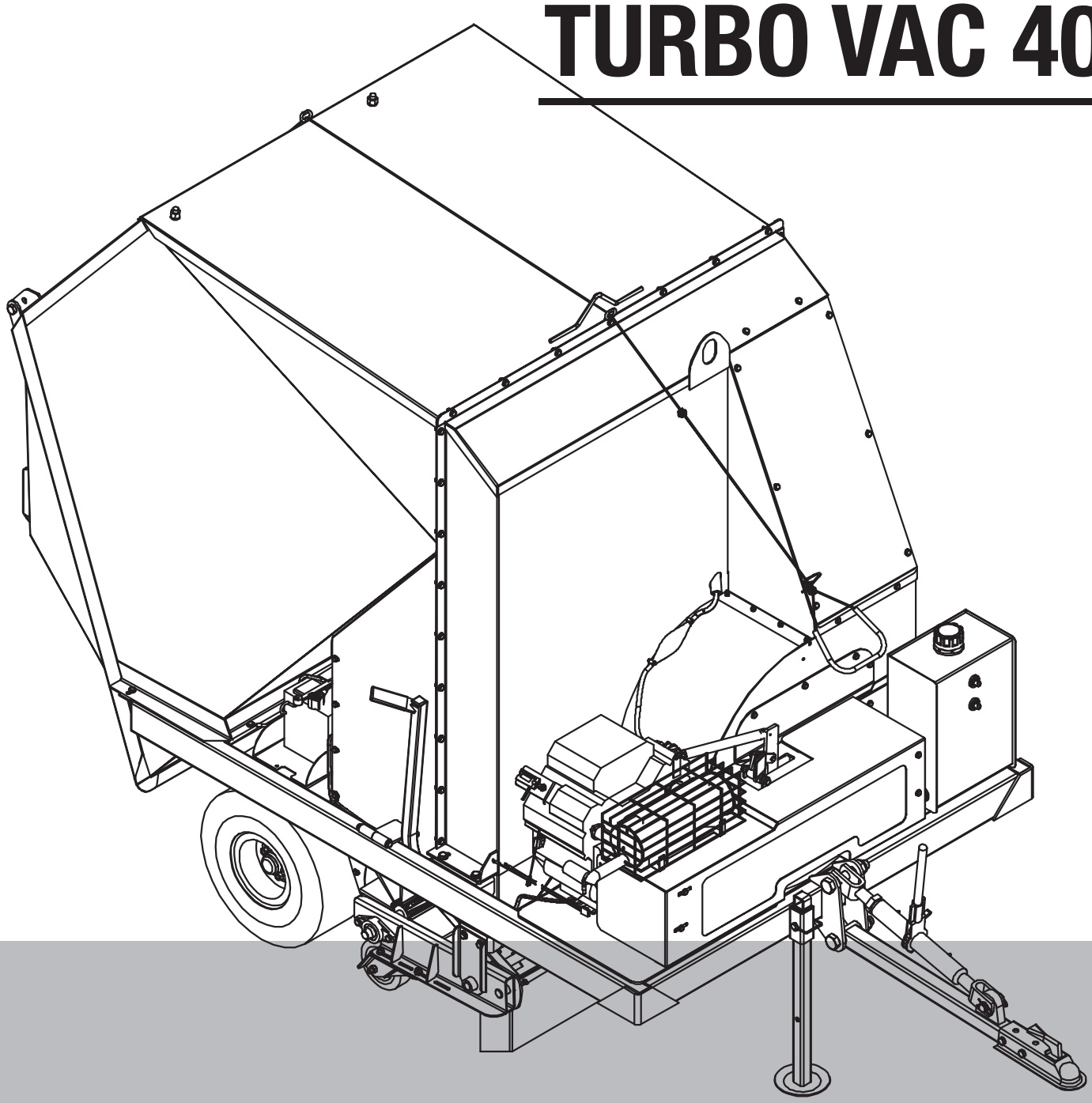
TURBO VAC 40E



OPERATOR'S & PARTS MANUAL

1-2024

HARPER INDUSTRIES INC

Thank you for purchasing a Harper Turbo Vac.

As with all Harper products, the Harper Turbo Vac has been developed through tough design and testing procedures to produce a machine that can be relied on. This manual gives assembly, operating, and service information for Model TV40 Turbo Vacs. Please read and understand all instructional material included with the Turbo Vac or its components before assembling and operating the equipment.

A Turbo Vac can present hazards to an operator who follows unsafe procedures in either the operation or maintenance of the unit. Therefore, SAFETY WARNINGS are presented at certain locations in the text.

THIS SYMBOL: **SAFETY WARNING!**
MEANING: Failure to understand and obey this warning may result in injury to you or others. Whenever this symbol is used, please pay very close attention to the information presented, and make sure you fully understand. If you do not, contact your dealer or Harper Industries, Inc. for clarification.

SAFETY WARNING!
ALL SHIELDS AND GUARDS MUST BE IN PLACE FOR PROPER AND SAFE OPERATION OF THIS EQUIPMENT. WHERE THEY ARE SHOWN REMOVED IN THIS MANUAL, IT IS FOR PURPOSES OF ILLUSTRATION AND INSTRUCTION ONLY. DO NOT OPERATE THIS EQUIPMENT UNLESS ALL SHIELDS AND GUARDS ARE IN PLACE.

Harper Industries, Inc. is continually striving to improve the design and performance of its products. We reserve the right to make changes in specifications and design without thereby incurring any obligation relative to previously manufactured products.

LIMITED WARRANTY

The Harper Turbo Vac is warranted against defects in workmanship and materials for a period of TWELVE MONTHS from the original date of retail purchase to the original purchaser.

Harper Industries will repair or replace, at our option, any part which our examination shows to be defective. Warranty is limited to parts, labor and ground freight delivery of replacement parts. The user will pay freight charges for parts submitted under this warranty.

No product or part may be returned for warranty consideration without prior approval from Harper Industries.

This warranty does not apply to parts subjected to misuse, abuse, alteration, improper or inadequate maintenance, or normal wear (including belts and broom).

Gasoline engines are not covered under this warranty. Refer to manufacturer's warranty for specific warranty information. Harper Industries, its agents or representatives, make or imply no other warranties.

Evaporative Emissions Control System Warranty

The evaporative emission control system is warranted for two (2) years. If any evaporative emission-related part on your equipment is defective in material or workmanship, the part will be repaired or replaced by Harper Industries Inc..

Your evaporative emission control system may include parts such as: fuel tanks, fuel lines, fuel line fittings, fuel caps, carbon canisters, canister mounting brackets, carburetor purge port connection, filters, vapor hoses, clamps, control valves, control solenoids, electronic controls, vacuum control diaphrams, purge valves, liquid/vapor separator and other associated components.

RECORDS

Date of Purchase _____ / _____ / _____

Serial Number Machine _____

Dealer's Name _____

Serial Number Engine _____

Dealer's Phone _____

Table of Contents

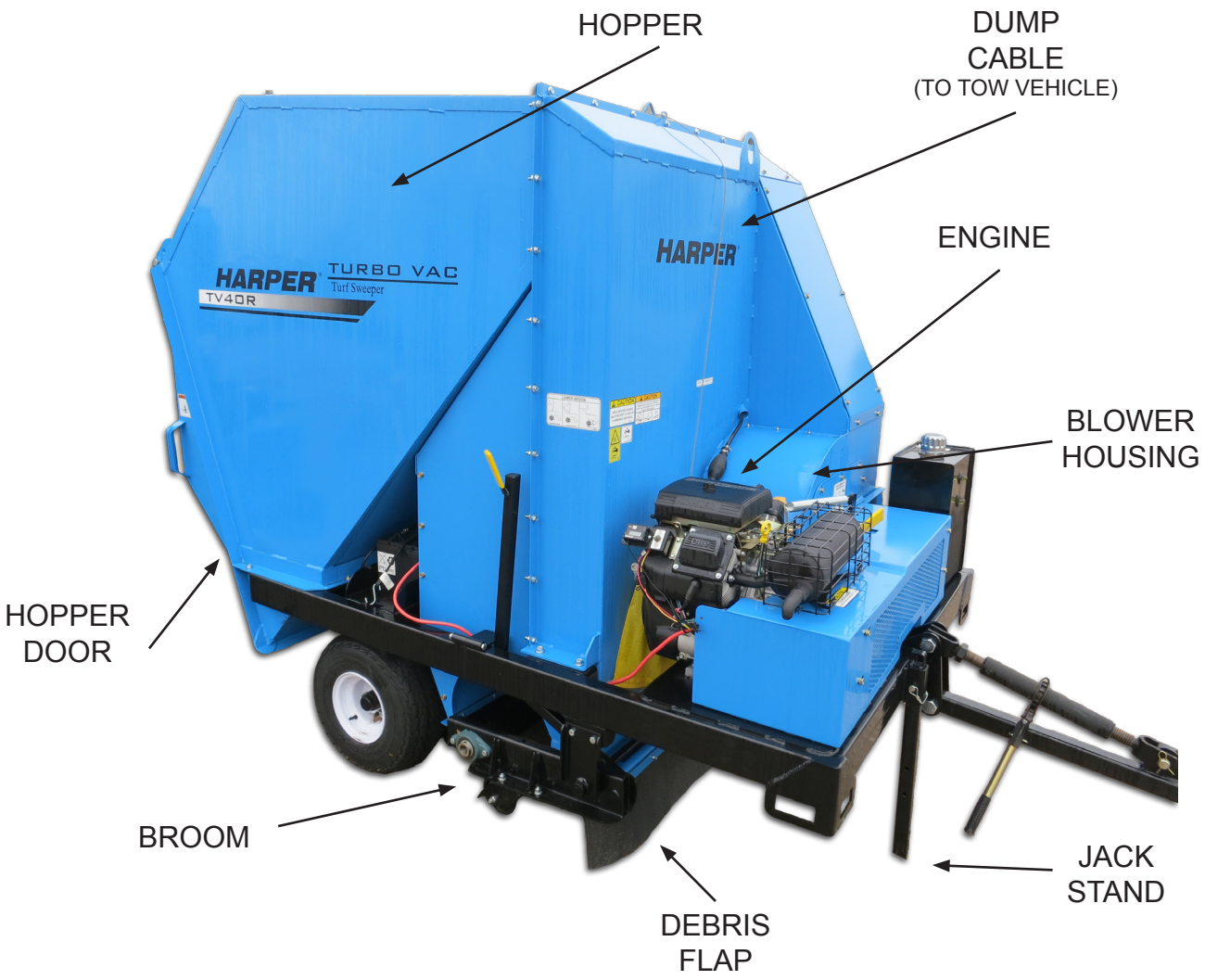
Specifications

Safety Features	Minimal dust generated, quiet operation - 90 dB
Blower Drive	Double V-belt drive with electric clutch
Blower Fan	25” diameter abrasion resistant steel with replaceable poly-liner 1 1/2” shaft with self-aligned bearings
Blower Discharge	Access plate for inspection and easy liner replacement
Airflow	Re-circulated air system
Brush Drive	Hydraulic motor direct drive
Engine	20 HP Kohler, gasoline
Hydraulics	Belt driven hydraulic pump
Hydraulic Oil	Terresolve EL 3068, bio-based, high performance, ISO 68-viscosity, severe service See Service Schedule
Main Frame	11 gauge welded and reinforced steel tubing
Bearings	Greaseable sealed bearings
Hopper Capacity	4 cubic yards
Wheels/Tires	4-bolt wheels, 18.5 x 9.5 tires
Controls	Engine, blower & brush controls on machine
Pick-up Brush	Option 12” Diameter x 52” replaceable brush
Discharge	Mechanical trip and latch system
Tongue and Hitch	Adjustable tongue functions as pick-up height controller
Paint	Durable 2-part polyurethane
Dimensions	135” L x 64” W x 82” H
Weight	1600 lbs. - 730 kg

NOTE: *Following publication of this manual, certain changes in standard equipment and/or options may have occurred which would not be included in these pages. Your Harper dealer is the best source for up-to-date information.*

Control Identification

TV40RE



Hopper – The hopper stores up to 4 yards of material.

Engine – 20 HP Kohler engine powers the blower and broom.

Hopper Door – Opens when the dump cable is pulled to release the material collected in the hopper.

Debris Flap – Helps to keep vacuum concentrated to the ground and to direct the material from the broom into the suction.

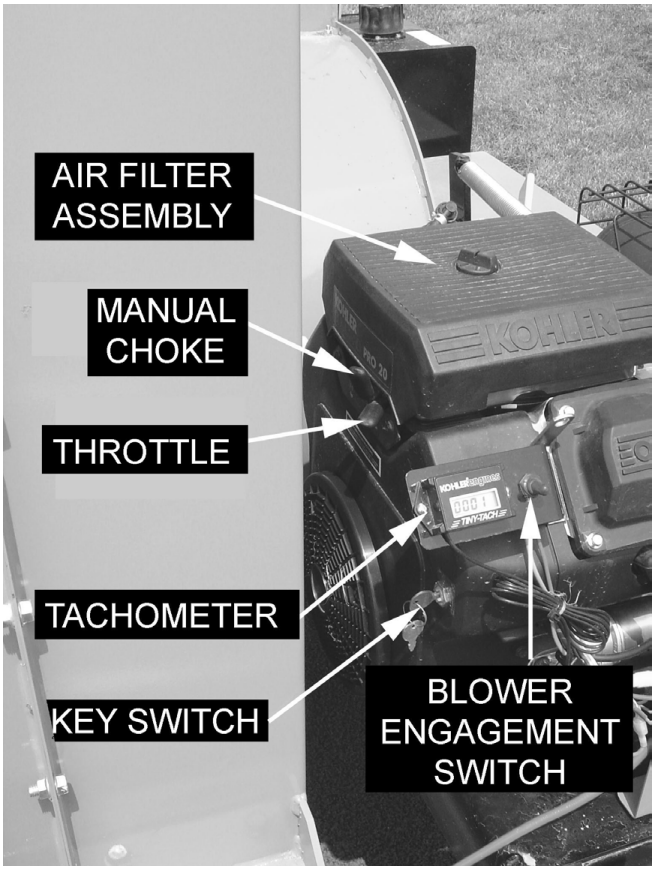
Blower Housing – Surrounds the fan and is covered on the inside by a plastic liner.

Broom (optional) – Assists material from the turf into the suction of the blower.

Dump Cable – Releases the hopper door.

Jack Stand – Supports the front of the Turbo Vac when it is not connected to a tractor. During operation, the jack stand must be up, with the wheel removed and in the transport location.

Engine Identification



Air Filter Assembly – See service section for care information.

Throttle – Adjusts engine speed.

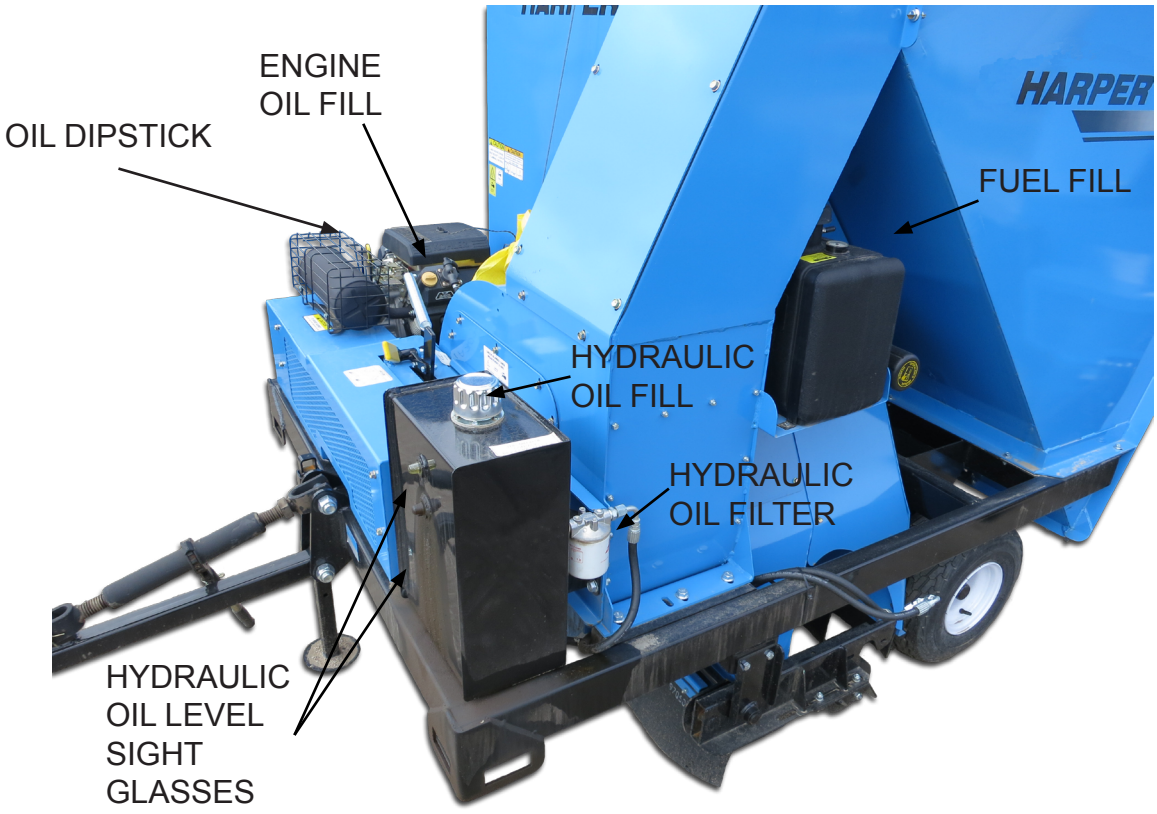
Manual Choke – Engage when starting the engine cold. Disengage when engine warms
up.

Tachometer – Shows the speed of the engine when running. Shows hours when engine is not running.

Key Switch – Used to start the engine

Blower Engagement Switch - Turns the blower on and off.

Fluid Maintenance Locations



Safety Guidelines

- Use genuine factory parts or parts with equivalent characteristics, including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or others.
- If hardware is not secure, or if some of the hardware is over-tightened, equipment failure may result, posing possible safety hazards.
- To prevent possible eye injury, always wear SAFETY GLASSES while operating equipment.
- Replace locknuts and locking screws if you can tighten them without feeling considerable resistance for several turns before they are completely tight. Replace them with factory authorized parts or their equivalent.

Gasoline

SAFETY WARNING!

Gasoline is extremely flammable and can be highly explosive.

- Always use an approved container for gasoline.
- Do not allow open flames or sparks while performing maintenance or refueling.
- Never remove the fuel tank cap or add gasoline when the engine is running or while it is hot.
- Never fill the fuel tank indoors (fumes can collect).
- Wipe up spilled gasoline immediately and completely.
- Do not store gasoline in a room with an appliance that has a pilot light to where electrical appliances or switches may cause sparks.
- Always store gasoline outside, in a safety can (a can which has a flame arrestor and pressure relief valve in pour spout).
- Gasoline fumes are heavy and will sink to the lowest point, collecting and becoming more and more hazardous. 1 part gasoline in 20 parts air will explode easily and violently.
- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
- Be certain to provide adequate ventilation if an engine must be run indoors - exhaust fumes are dangerous.

Guards & Shields

- Keep all safety devices in place.
- Replace all worn, damaged, unusable, missing or lost safety shields and guards before operating the equipment.
- Keep the equipment in good operating condition.

Safety Decals

- If safety related or instructional decals become illegible or are removed, replace them immediately. New decals may be obtained from your local Harper Dealer.
- If you replace parts that have such decals attached to them, make sure the decals are replaced with current versions, and are on the replacement parts before the machine is operated again.

Battery

SAFETY WARNING!

Batteries can produce explosive gas. Use extreme caution when working on the battery.

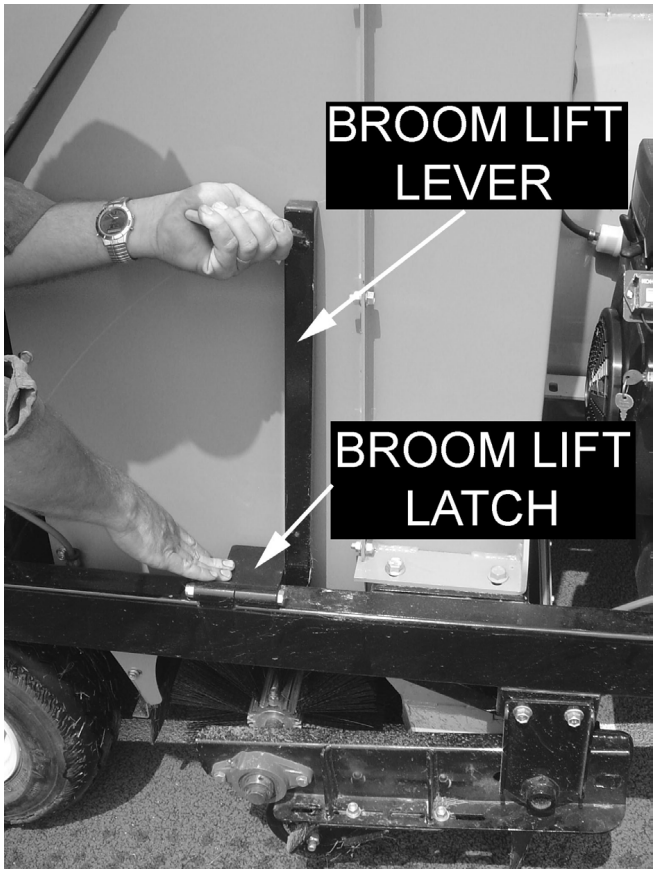
- Ventilate when charging battery or using in an enclosed space.
- DO NOT produce sparks from cable clamps, tools, or other sources; and DO NOT allow flames or smoking in the vicinity of the battery.
- Shield eyes when working near the battery.

Equipment & Controls

- Read and understand this manual.
- Altering this equipment in any manner which adversely affects its operation, performance, durability, or use will void the warranty and may cause hazardous conditions.
- Know the location and function of all controls and how to stop this equipment quickly in an emergency before you operate the equipment.
- Keep all nuts, bolts and screws tight to help ensure safe operation of this equipment.

Towing

- If towing on the highway, tail lights and turn signals must be attached before towing.
- Use a safety chain when towing.
- Make sure jack stand is up.
- Tire pressure should be 30-32 psi.
- Make sure lug nuts are tight.
- Broom should be locked up so that it does not rub on the ground.



Broom is locked up when the lift handle is in the vertical position and the latch is in place.

Hydraulics

SAFETY WARNING!

Escaping fluid under pressure can penetrate skin causing serious injury. To prevent serious injury or death:

- Relieve pressure on system before repairing, adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks.
- Use wood or cardboard instead of hands when looking for leaks.
- Keep all components in good repair.
- Do not use any type of heat, (welding, soldering, cutting torch, etc) near pressurized lines.

Before Operation

- Before operating this equipment, read and understand the Owner's Manual.
- Do not allow children to operate this machine.
- Tire pressure should be 30-32 psi. Make sure both tires have equal pressure.
- Wear approved eye and ear protection and other appropriate safety equipment while operating the machine.
- Make sure bolts holding tongue are secure and the jack is in the transport position. Use a safety chain.
- Engine governor settings are preset and should not be changed; any change can damage moving parts and void the warranty.
- Before starting the machine, visually inspect all nuts, bolts and other fasteners to see that they are properly secured. Nuts, bolts and other fasteners should be checked every 8 to 10 hours of operation for proper alignment and tightness.
- Replace damaged or missing safety decals.
- Replace locknuts and locking screws if you can tighten them without feeling considerable resistance for several turns before they are completely tight. Replace them with factory authorized parts or their equivalent.
- Make sure that all bearings or hinging parts are greased and or oiled properly. (See Service & Maintenance Section for more information)

During Operation

- Always keep a fire extinguisher near the Turbo Vac during operation.
- Keep clothing and all body parts away from rotating parts.
- Engine governor should not be changed; any change can damage moving parts and void warranty.
- When sweeping material into the machine, make certain there are no foreign materials such as rocks, cans, bottles or other hard materials included. Sweeping hard materials will reduce the life of the plastic liner in the blower housing.
- If a foreign object should strike the broom or blower mechanism and cause an unusual noise or vibration, shut the engine off immediately and allow it to come to a complete stop. Disconnect the spark plug wire from the spark plug from the power unit.

Do the following:

1. Inspect for damage.
2. Repair or replace any damaged parts.
3. Check for and tighten any loose bolts, nuts, fasteners or parts.

- Keep the engine area clean from debris and other accumulations to lessen the possibility of fire.
- Keep all safety shields and guards in place and in good working condition.
- If the Turbo Vac should become clogged, shut off the engine and allow it to come to a complete stop.
- Be sure to provide adequate ventilation if the engine must be run indoors – exhaust fumes are very dangerous.
- Hydraulic system operates under high pressure. Disable system prior to service.

Operations

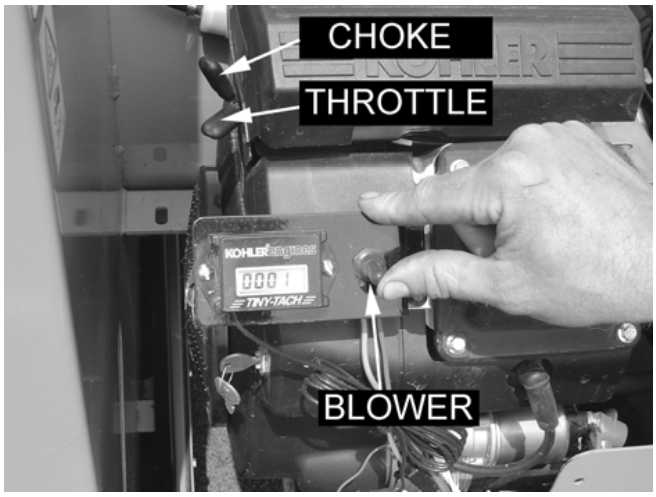
1. Obtain and wear safety goggles before operating.
2. Fill the tank with gasoline. (Refer to engine manual for gasoline specifics.)

⚠ SAFETY WARNING! ⚠

Gasoline is extremely flammable and can be highly explosive. See Safety Guidelines for more information.

3. Make sure the vent valve on the gas cap is open. (If the cap is closed the engine will vapor lock and will not run.)

4. Attach the Turbo Vac to the tow vehicle. Be sure that the Turbo Vac is adjusted to the correct height. (Refer to adjustment section for information on setting the height.)
5. Run the dump cable to the tow vehicle to allow for convenient dumping. Attach with the pin provided to allow cable to break away from tow vehicle if it is not removed when unit is disconnected. This will help prevent any damage if the cable is forgotten.
6. Make sure that the blower and broom are disengaged.
7. For cold starting set the choke.
8. Turn the key switch to the start position and release as soon as the engine starts. Do not turn the starter for more than 10 seconds
9. Once the engine is running, gradually move the choke lever to the off position and allow the engine to warm up. (When restarting a warm engine, it should not be necessary to use the choke lever.)
10. Move the blower switch located beside the engine tachometer to the “on” position.
11. Set the engine speed at 3200 RPM.



12. If the unit has a broom, lower it and slowly engage broom lever.

13. Begin normal operation.

Stopping Operation

SAFETY WARNING!

Do not leave machine unattended, or attempt any service or inspection unless the machine has come to a complete stop, the engine has been shut off, and the spark plug has been disconnected.

1. Shut off tow vehicle and set the park brake.
2. Turn off the blower switch and disengage the broom lever.
3. Shut off the engine and allow the machine to come to a complete stop.

Unloading

SAFETY WARNING!

To reduce the risk of injury, do not stand near the back of the Turbo Vac while unloading.

1. Find a suitable place to dump the collected material.
2. Pull dump cable. Hopper door will open and material will slide out.
3. Drive forward to allow all the collected material to escape hopper.

4. Door will swing shut and latch when it clears the collected material.

Adjustments

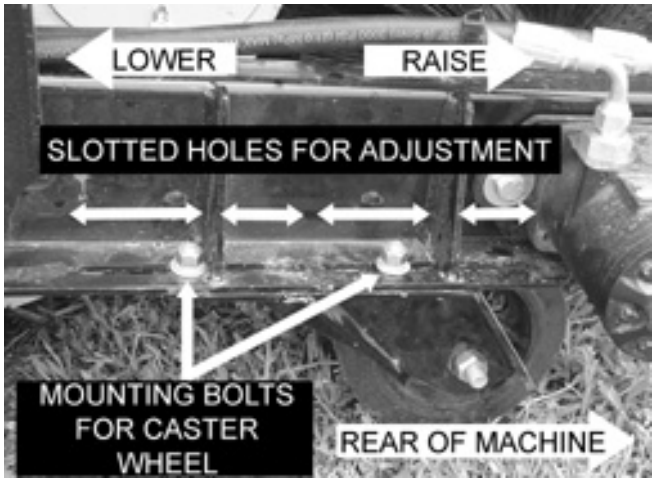
Broom height

The broom height needs to be adjusted so that the broom is touching the top of the grass.

The broom height is determined by the caster wheels that it rides on. The caster wheel is attached with bolts located in slotted adjustment holes.

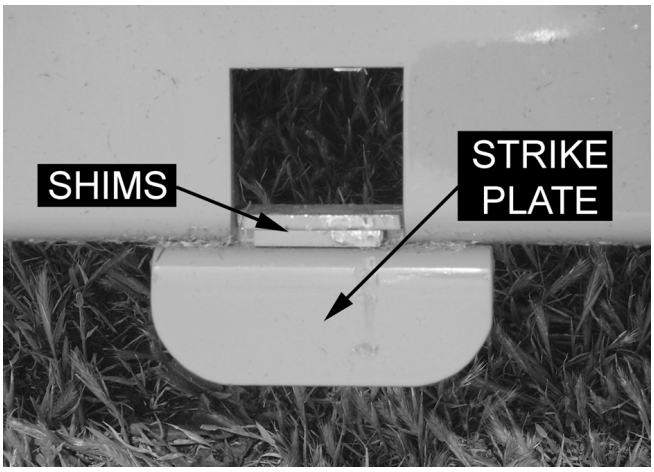
To adjust:

- Remove caster wheel mounting bolts.
- Adjust caster wheel to achieve desired broom height and tighten bolts.



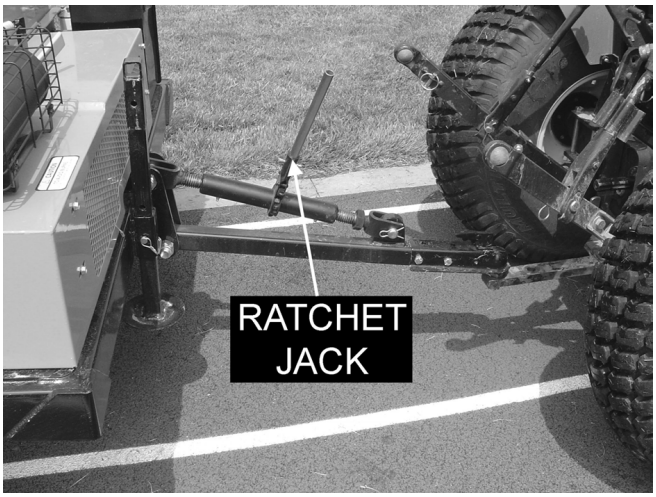
Note: Brooms are originally 12” in diameter. When the broom wears to 10” the adjustment will not lower the broom enough for it to perform adequately and needs to be replaced. Part # 973001

Hopper Door Latch
Adjustment of the hopper door latch should never be necessary. If the hopper door won't latch or the hopper door does not seal against the hopper there are adjustments that can be made. There are shims that bolt on with the strike plate that can adjust the depth of the latch. It is possible to add or remove shims to make the door close properly.

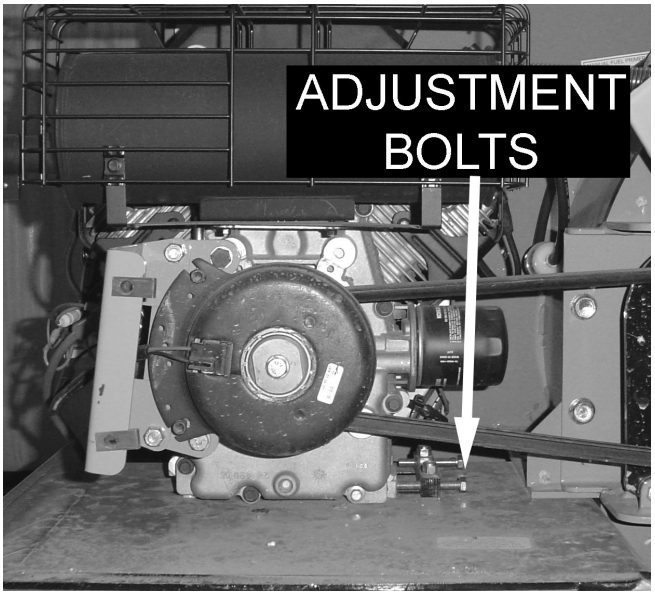


Height Adjustment
For best performance the Turbo Vac must be operating at the correct height. At the correct height the debris flap touches the top of the grass.

The height can be easily adjusted up or down by using the ratchet jack.

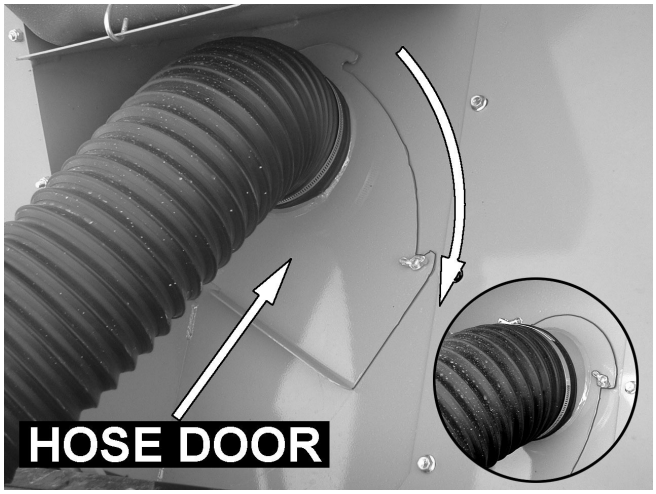


Belt Tension
If the blower drive belt needs it is adjusted by sliding the motor.
To Adjust:
- Loosen engine mounting bolts from underneath.
- Adjustment bolts are tightened to slide motor and increase belt tension
- Tighten engine mounting bolts

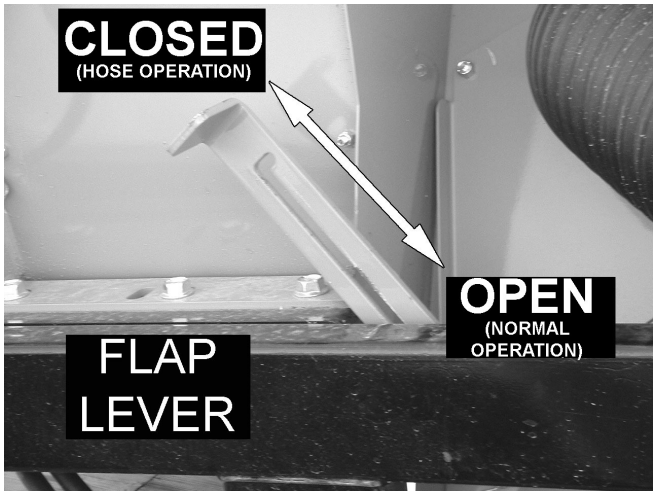


Hose Option (900217)

1. Open the Hose Door by loosening the wing nut and swiveling the door down to the next notch.



2. Close the Flap. This blocks off air intake from underneath and creates suction in the hose.



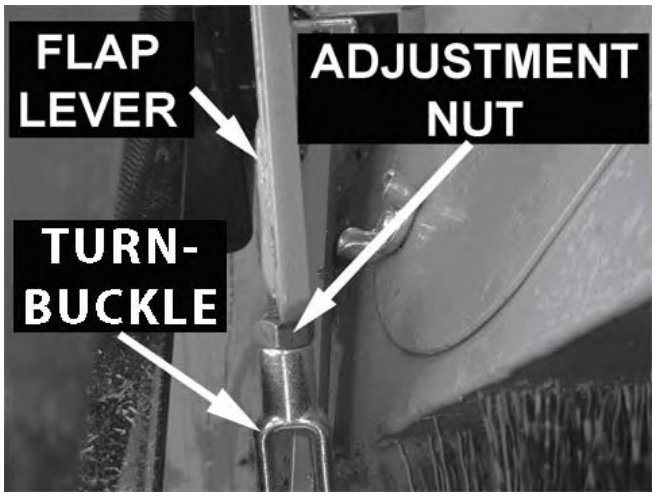
3. Begin using hose.

Stopping Operation

1. Move the flap lever to the open position.
2. Close the hose door.
3. Store hose in cavity between hopper and frame.

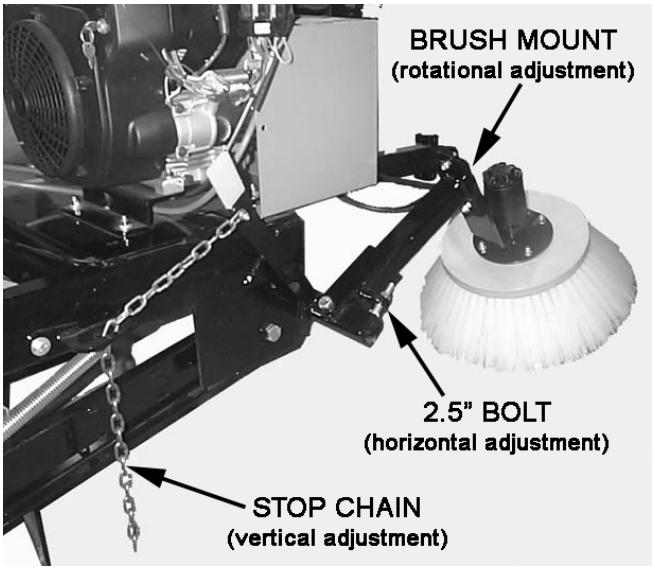
Flap Adjustment

- If there is not adequate suction at the hose make sure the flap is closing completely (a small gap will work because the vacuum will suck it shut). If there is a big gap, the flap may need adjusted. Loosening the adjustment nut will shorten the flap lever causing the flap to close tighter.



Edge Brush Option (900216)

- Follow instructions in Parts Section for installation of Edge Brush Option.
- The edge brush kit is used for cleaning areas along fences and curbs, etc., that are difficult to reach with the Turbo Vac broom.



- The edge brush can be adjusted vertically and horizontally, as well as rotated at an angle, so that debris is thrown into the Turbo Vac broom. For best results, angle the front edge of the brush downward.
- The stop chain is used to adjust the height of the brush during operation and to hold it up during transport.
- Never allow the brush to rest com pletely on the ground during operation.

SAFETY WARNING!

The Turbo Vac should never be transported with the edge brush in operating position. Always use the stop chain to suspend the brush during transport.

Contact your Harper Dealer for more information about optional equipment, or see the Harper Industries website at: www.harperindustries.com

Service & Maintenance

SAFETY WARNING!

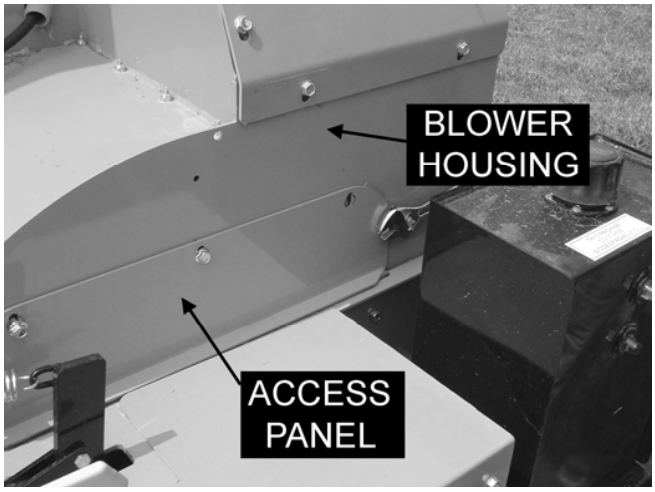
- **Before servicing or inspecting the Turbo Vac, make sure the power source is shut off and all moving parts have stopped.**
- **Disconnect the spark plug wire from the spark plug or the negative battery cable to prevent the engine from being turned on accidentally during service.**
- **Always wear safety glasses and protective gloves when servicing the Turbo Vac.**

Blower Liner

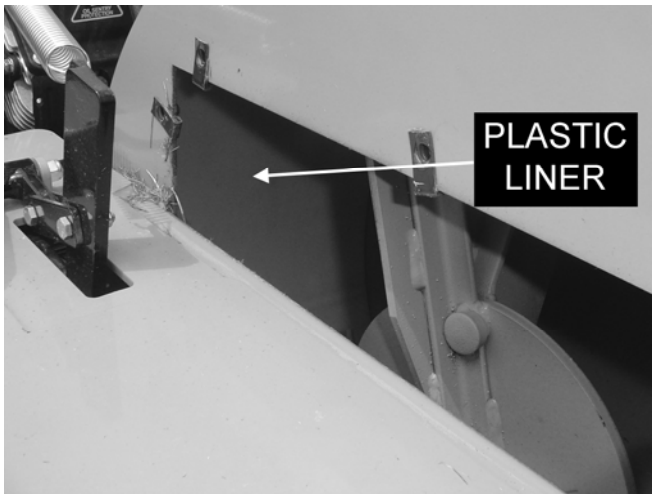
IMPORTANT!

Regularly check the BLOWER LINER in the blower housing for wear. Failure to maintain blower liner may result in damage to the blower housing.

To check Blower Liner:
Remove access panel.



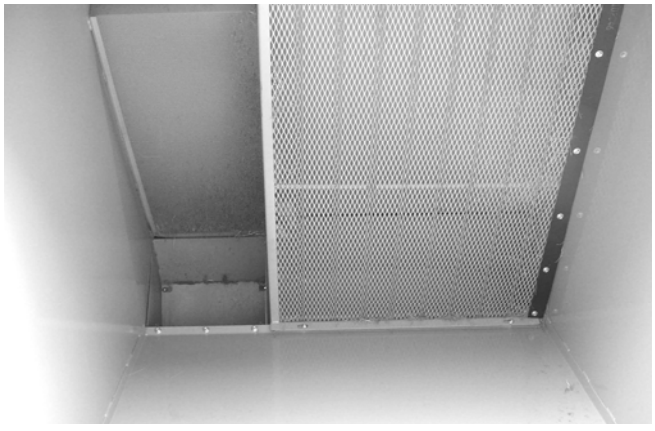
Check white plastic liner located around the inside walls of the blower housing around the blower fan.



If liner is damaged or worn through; replace to avoid damage to blower housing.
Part # 972009 or 972021 for a heavy duty urethane liner.

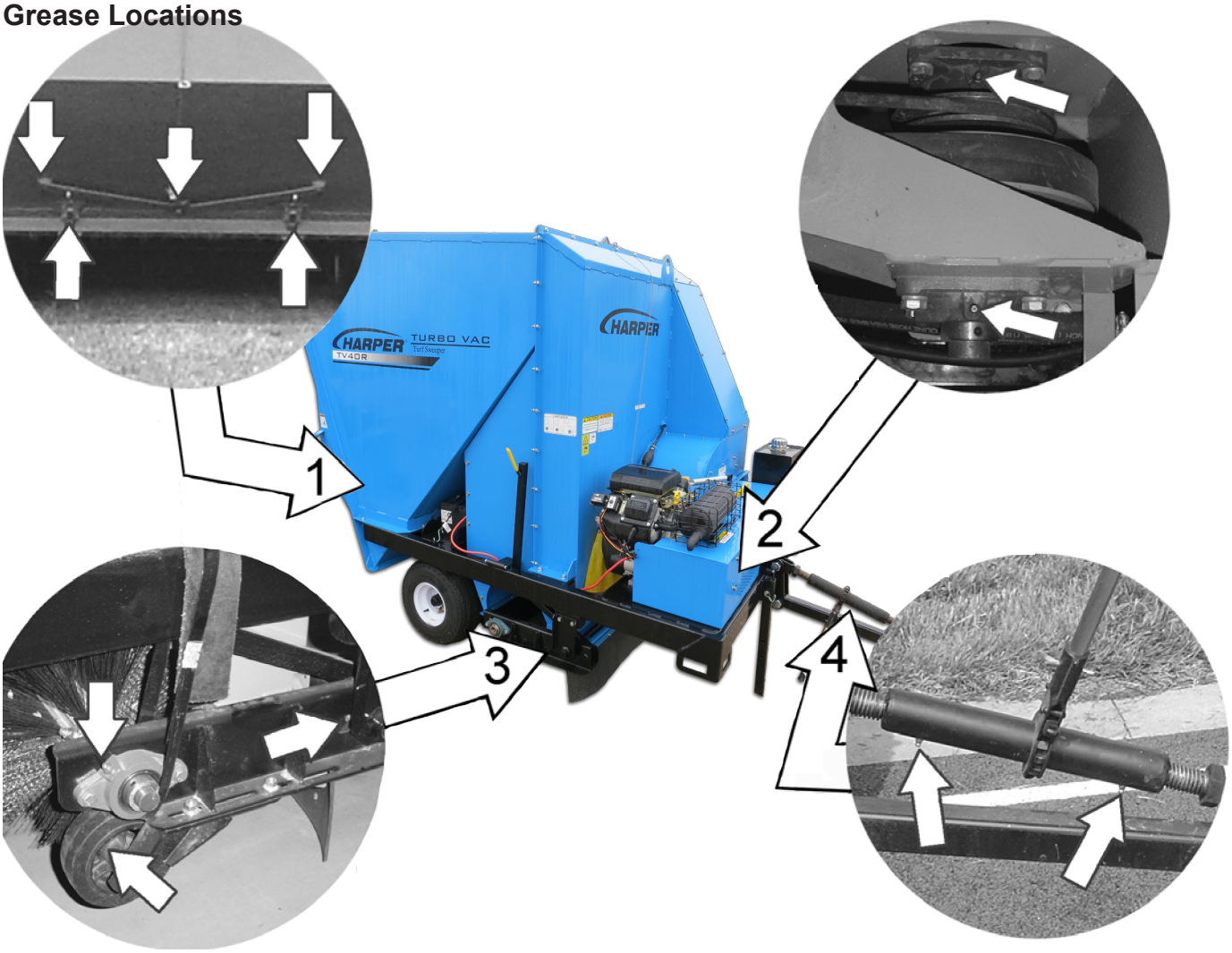
NOTE: Blower liner is a wear item and is not covered under warranty. Sandy conditions may shorten the life of the blower liner.

Screens
Periodically check the return air screens located in the hopper for excess buildup. Excess buildup can reduce performance and or negate the return air system causing an increase of dust.



To Clean Main Screen: Remove the two pins holding it in place. The screen will then swing down and can easily be cleaned out.

Grease Locations



1. Hopper Door Latch Mechanism
The two latches and three shoulder bolts should be periodically oiled to prevent rusting and ensure proper operation.

2. Blower Shaft
The two grease zerks located on the shaft bearings should be greased every 10 hours. To access these bearings the front safety shield must be removed.

3. Broom Bearings, Pivot Arms & Wheel
The grease zerks located on the ends of the broom shaft, the pivot arms and the caster wheel should be greased every 10 hours. The pivot arm grease zerks are accessed through a hole in the frame.

4. Ratchet Jack
There are two grease zerks on the ratchet jack that should be greased annually.

Service Schedule

***Refer to engine manual for more information on engine servicing**

****Disclaimer – On engine applications KOHLER Engine Co. recommends the following:**

Daily or Before Starting Engine

Check engine oil level…….……..... SAE 10W-30
Check hydraulic oil level……..……. Mobil EAL 224H or equivalent - oil has shelf life of two years
Use only biodegradable oil; mixing oils will result in a loss of biodegradability.
Fill fuel tank……..…….. Clean unleaded, 87 Octane or higher
Check air cleaner……..…… Make sure there are no dirty, loose or damaged parts.
Check air intake and cooling areas…..…….. Clean if necessary
Visually inspect machine……..…… Check for loose bolts, fitting and hoses
Grease……..…….. Refer to service section
Check tire pressure……..…… 30-32 PSI

25 Hour Service (including previous items)
Clean pre-cleaner element …….. Replace if necessary
Kohler part # 24 083 05
Check plastic liner…….. Replace if necessary
Part # 972009

50 Hour Break-in Service (perform after first 50 hours of use)
Change hydraulic filter…….. DewEze part # 220559

100 Hour Service (including previous items)
Replace air cleaner element……... Kohler part # 24 083 03
Change oil……..… SAE 10W-30
Clean cooling areas by removing cooling shrouds
Check serviceability of battery

200 Hour Service (including previous items)
Check spark plug condition and gap……..…... Gap to .76 mm
Spark Plug – Champion RC12YC
Kohler part # 12 132 02
Change oil filter……..…... Kohler part # 12 050 01-S

250 Hour or Annually Service (including previous items)
Change hydraulic filter……..…… DewEze part # 220559

500 Hour or Annually Service (including previous items)
Have Bendix starter drive serviced***
Have solenoid shift starter disassembled and cleaned***
Have crankshaft spline lubricated***
Change hydraulic oil…….…… 5 gallons - Mobil EAL 224H or equivalent
***Should be serviced by an authorized Kohler Dealer

Troubleshooting

Engine:

Problem:	**What to Check:**
Engine will not start	• Improper control settings • Engine may be low on fuel • Engine may be low on oil • Battery charge may be too low • Possible internal problems • Make sure engine is primed with gas from the manual primer bulb
Problem: What to Check:	
Engine shuts off during operation	• Engine may be low on fuel • Engine may be low on oil • Air filter may be clogged

Vacuum:

Problem:	**What to Check:**
Turbo Vac won't sweep up material	• Hopper may be full • Turbo Vac may not be close enough to the ground • Air screens in hopper may be plugged • Nozzle may be plugged • Door for hose option may be closed

Parts Section

TURBO VAC 40

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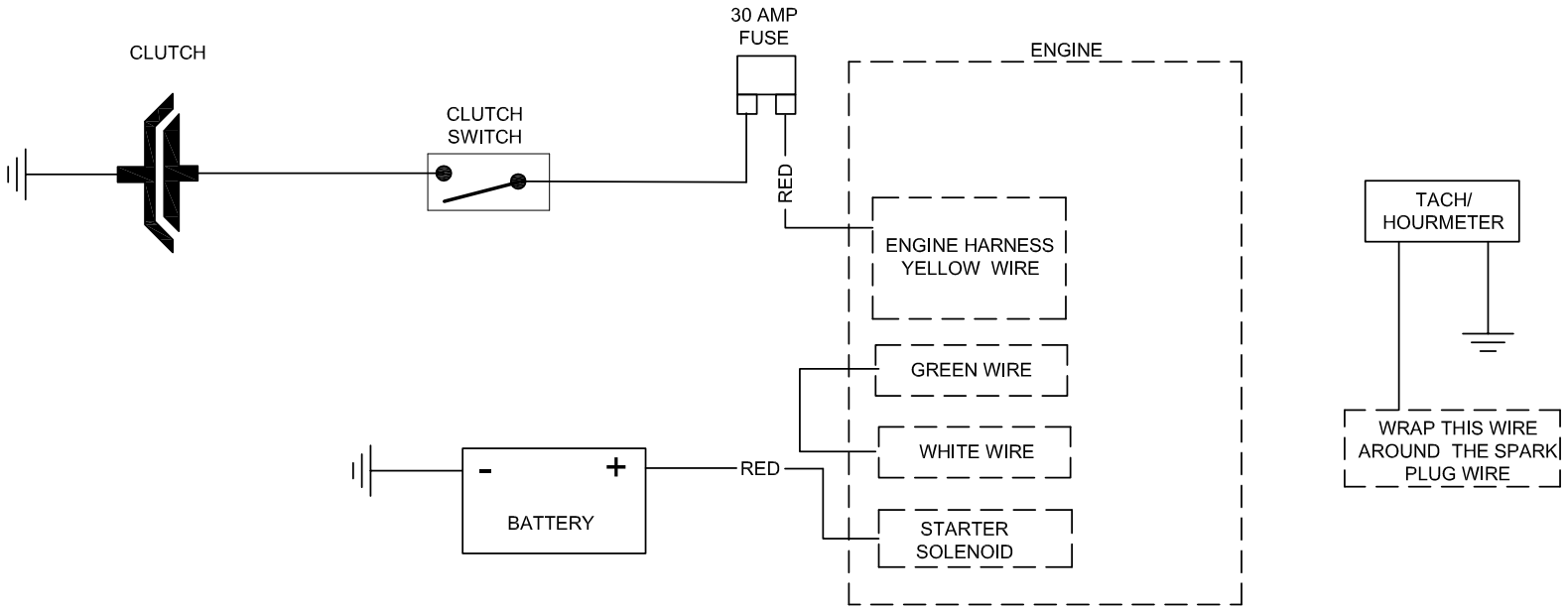
TV 40E ELECTRICAL SCHEMATIC



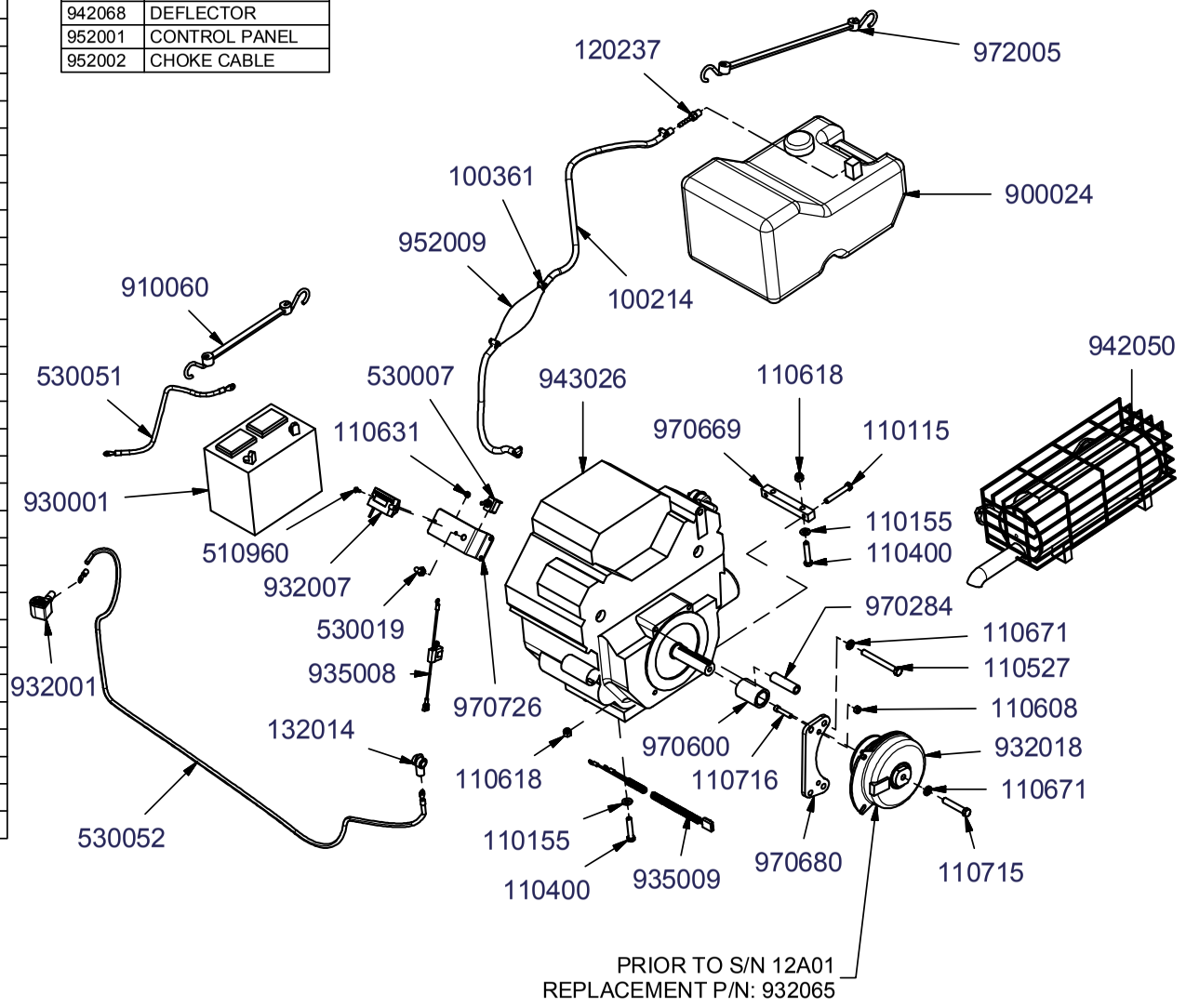
07–04

Parts List		
PART #	QTY	DESCRIPTION
100214	3.5 FT	HOSE, .25 BULK LOLA
100361	4	CLAMP, HOSE #4 .25 MINI
110115	2	BOLT, 3/8-16 X 2.5 TAP
110155	6	WASHER, 3/8" FLAT SAE
110400	6	BOLT, 3/8-16 X 2.0
110527	2	BOLT, 7/16-14 X 4.0
110608	2	NUT, 5/16-18
110618	7	NUT, 3/8-16 LOCK NYLON INSERT
110631	2	NUT, 10-24 LOCK NYLON INSERT
110671	3	WASHER, 7/16" LOCK
110715	1	BOLT, 7/16-20 X 2.5
110716	2	BOLT, 5/16-18 X 1.5 SHCS
120237	1	ADAPTER, 4BH-4MP
132014	1	INSULATOR CAP, (ALTERNATOR)
510960	2	SCREW, 10-24 X 0.5, RHMS
530007	1	TOGGLE SWITCH
530019	1	SWITCH BOOT
530051	1	BATTERY CABLE, GROUND
530052	1	BATTERY CABLE
900024	1	FUEL TANK
910060	1	BATTERY STRAP
930001	1	BATTERY
932001	1	POSITIVE TERMINAL COVER
932007	1	TACHOMETER / HOUR METER
932018	1	CLUTCH, ELECTRIC
935008	1	FUSE HOLDER, ATC, 14 GA., MINI
935009	1	CLUTCH WIRE ASSY
942050	1	MUFFLER, 20HP KOHLER
943026	1	ENGINE, KOHLER 20HP TWIN
952009	1	PRIMER BULB
970284	2	SPACER, .75 X .50 X 2.75
970600	1	SPACER, 1.625 X 1.13
970669	1	BLOCK, BELT TENSIONER
970680	1	CLUTCH BRACKET
970726	1	TACHOMETER BRACKET
972005	1	HOLD DOWN STRAP 15"

ENGINE PARTS	
PART #	DESCRIPTION
902173	FUEL FILTER
942050	MUFFLER
942051	GUARD ASSY
942068	DEFLECTOR
952001	CONTROL PANEL
952002	CHOKE CABLE

ENGINE

PRIOR TO S/N 11A01



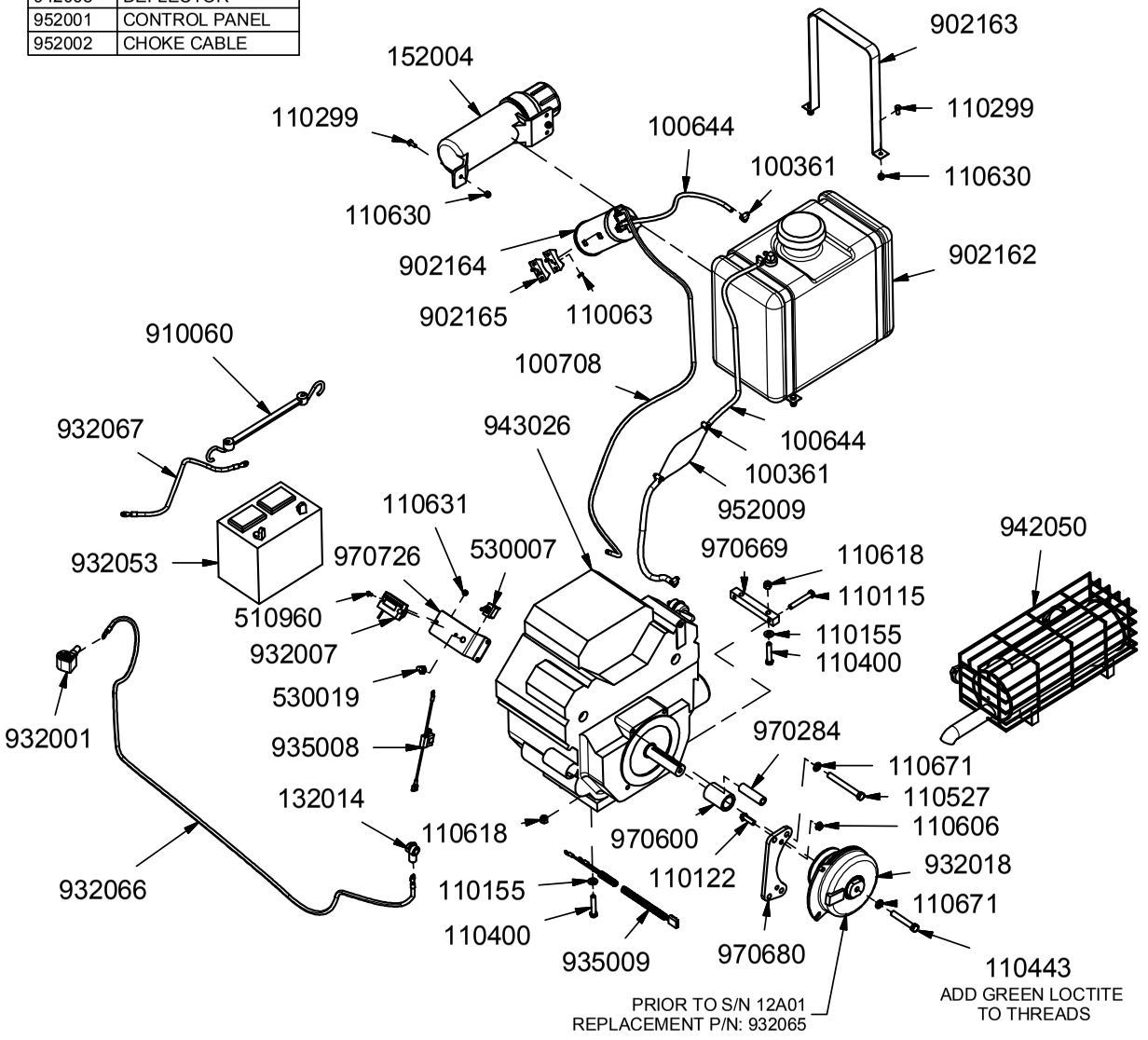
10/11/2012

Parts List		
PART #	QTY	DESCRIPTION
100361	7	CLAMP, HOSE #4 .25 MINI
100644	3 FT	HOSE, 1/4, LOW PERM
100708	4 FT	HOSE, 3/16 LOW PERM
110063	4	POP RIVET, 1/8
110115	2	BOLT, 3/8-16 X 2.5 TAP
110122	2	BOLT, 5/16-18 X 1.25, WIZ FLANGE
110155	15	WASHER, 3/8" FLAT SAE
110299	6	BOLT, 1/4-20 X .625 HEX GR 5
110400	6	BOLT, 3/8-16 X 2.0
110443	1	BOLT, 7/16-20 X 2.75
110527	2	BOLT, 7/16-14 X 4.0
110606	2	NUT, 5/16-18 WIZ FLANGE
110618	7	NUT, 3/8-16 LOCK NYLON INSERT
110630	6	NUT, 1/4-20 LOCK (NYLON INSERT)
110631	2	NUT, 10-24 LOCK NYLON INSERT
110671	3	WASHER, 7/16" LOCK
132014	1	INSULATOR CAP, (ALTERNATOR)
152004	1	HOLDER, MANUAL
510960	2	SCREW, 10-24 X 0.5, RHMS
530007	1	TOGGLE SWITCH
530019	1	SWITCH BOOT
902162	1	FUEL TANK ASSY, 6 GAL
902163	2	STRAP, HOLD DOWN
902164	1	CARBON CANISTER
902165	2	CARBON CANISTER BRACKET
910060	1	BATTERY STRAP
932001	1	POSITIVE TERMINAL COVER
932007	1	TACHOMETER / HOUR METER
932018	1	CLUTCH, ELECTRIC
932053	1	BATTERY, 12V GEL
932066	1	BATTERY CABLE, POSITIVE 4 GA - 60"
932067	1	BATTERY CABLE, GROUND
935008	1	FUSE LINK
935009	1	CLUTCH WIRE ASSY
942050	1	MUFFLER, 20HP KOEHLER
943026	1	ENGINE, KOHLER 20HP TWIN
952009	1	PRIMER BULB
970284	2	SPACER, .75 X .50 X 2.75
970600	1	SPACER, 1.625 X 1.13
970669	1	BLOCK, BELT TENSIONER
970680	1	CLUTCH BRACKET
970726	1	TACHOMETER BRACKET

ENGINE SERVICE PARTS	
PART #	DESCRIPTION
902173	FUEL FILTER
942050	MUFFLER
942051	GUARD ASSY
942068	DEFLECTOR
952001	CONTROL PANEL
952002	CHOKE CABLE

ENGINE

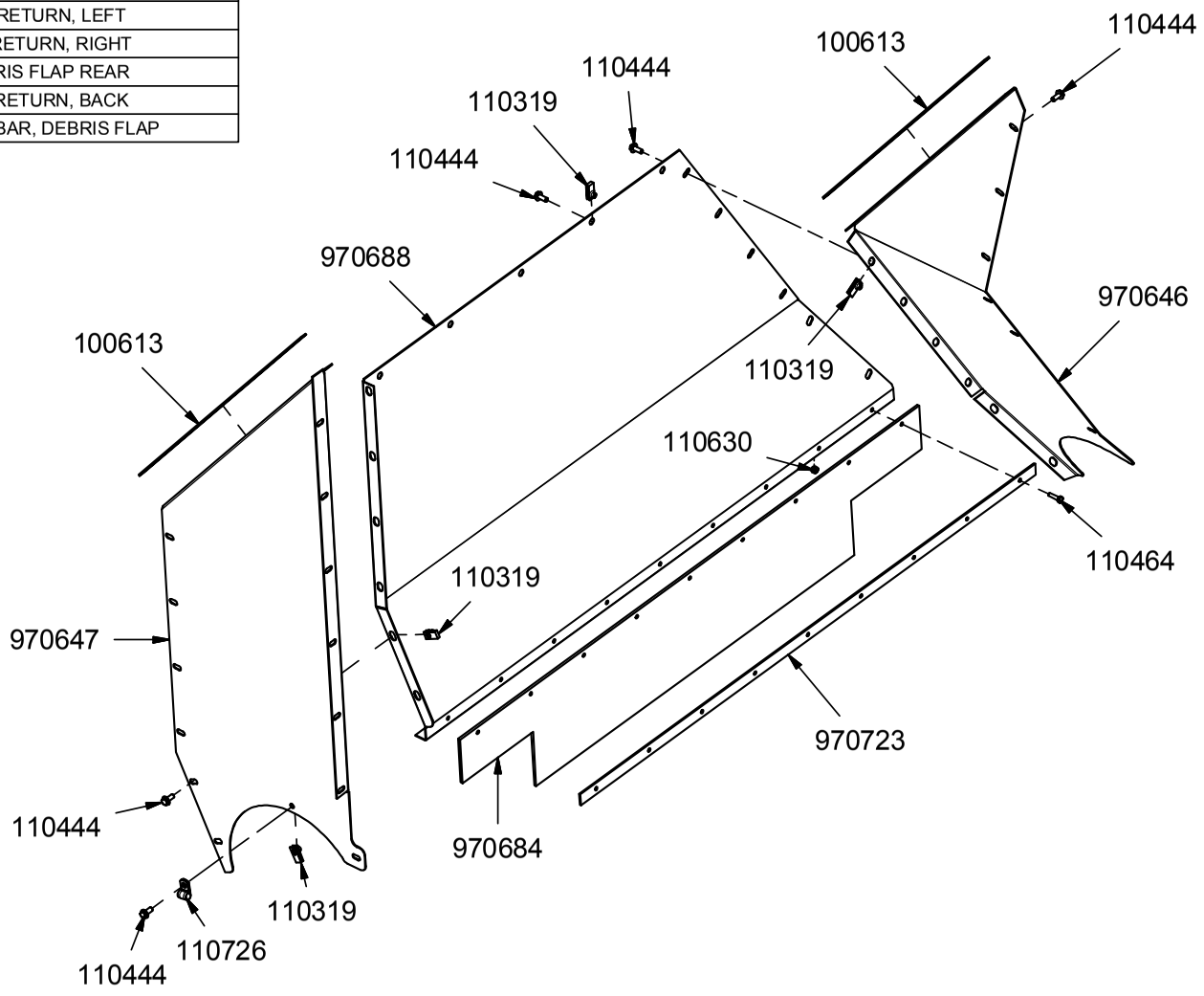
FOR S/N 11A01 & ABOVE



10/21/2013

Parts List		
PART #	QTY	DESCRIPTION
100613	8 FT	SEAL
110319	17	NUT, 5/16-18 U-TYPE .75L
110444	25	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110464	9	BOLT, 1/4-20 X 1.0
110630	9	NUT, 1/4-20 LOCK (NYLON INSERT)
110726	2	CLAMP, ADEL .75WX.5IDx.406 HOLE
970646	1	AIR RETURN, LEFT
970647	1	AIR RETURN, RIGHT
970684	1	DEBRIS FLAP REAR
970688	1	AIR RETURN, BACK
970723	1	CLAMP BAR, DEBRIS FLAP

AIR RETURN

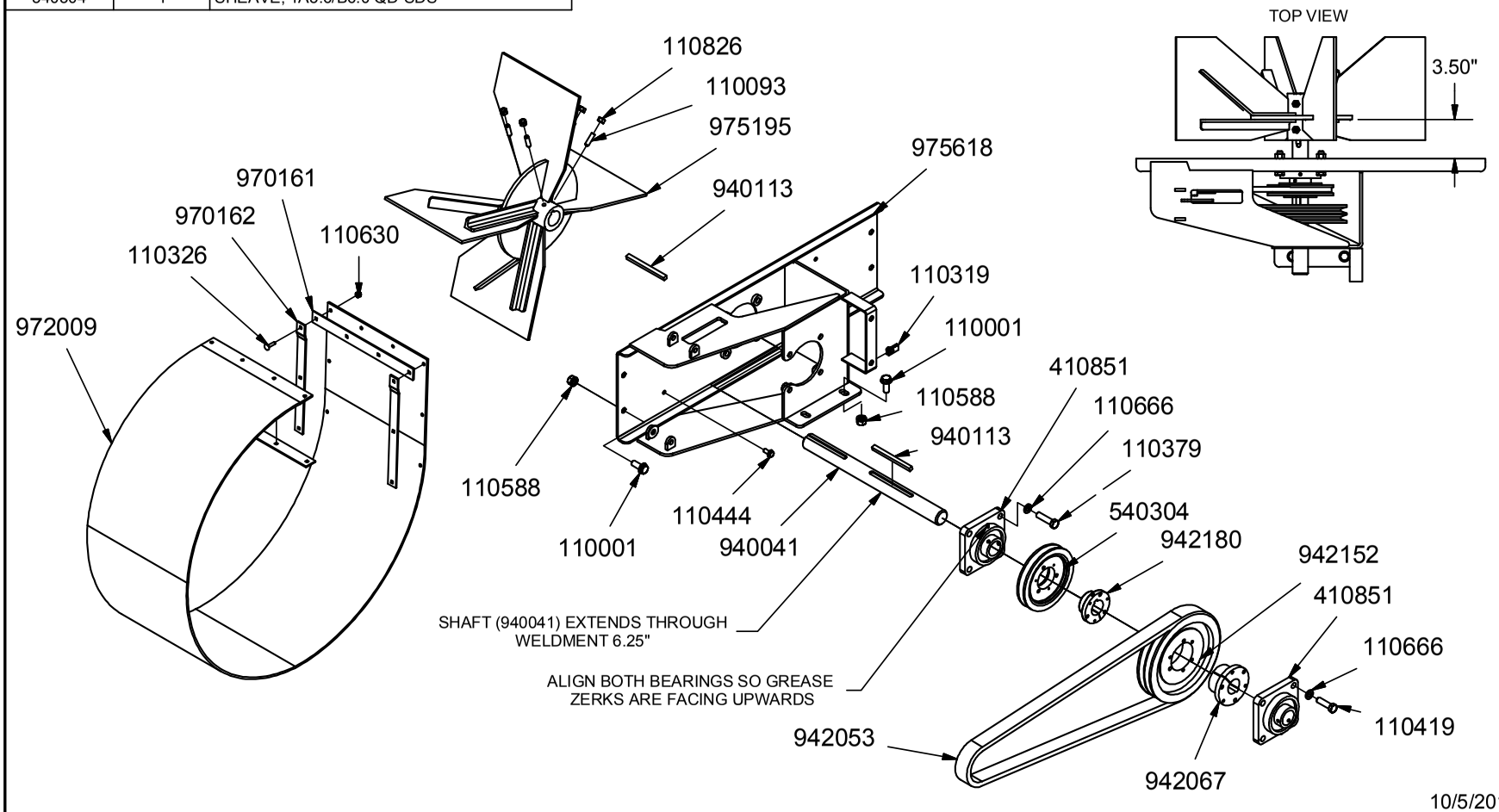


10/9/2012

FAN & LINER

Parts List		
PART #	QUANTITY	DESCRIPTION
110001	6	BOLT, 1/2-13 X 1.25, WIZ FLANGE
110093	4	SetScrew, 3/8-16 X 1.25
110319	2	NUT, 5/16-18 U-TYPE .75L
110326	12	Bolt, 1/4-20 X 1 in Carriage
110379	4	BOLT, 1/2-13 X 2.0
110419	4	BOLT, 1/2-13 X 1.75
110444	4	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110588	6	NUT, 1/2-13 WIZ-FLANGE
110630	12	NUT, 1/4-20 LOCK (NYLON INSERT)
110826	4	NUT, 3/8-16 GR 5
410851	2	BEARING, 4FNG 1 1/2"
540304	1	SHEAVE, 1A5.6/B6.0 QD-SDS

Parts List		
PART #	QUANTITY	DESCRIPTION
940041	1	BLOWER SHAFT
940113	2	KEY, 3/8 X 5
942053	1	BELT, POWERBAND 2B70
942067	1	BUSHING, SK 1 1/2
942152	1	SHEAVE, 2A8.2/B8.6 QD-SK
942180	1	BUSHING, QD 1-1/2" SDS
970161	2	BLOWER LINER RETAINER
970162	2	BLOWER LINER RETAINER
972009	1	BLOWER LINER. .187 STD UHMW
975195	1	FAN ASSY WLDMNT
975618	1	BLOWER SUPPORT WLDMNT

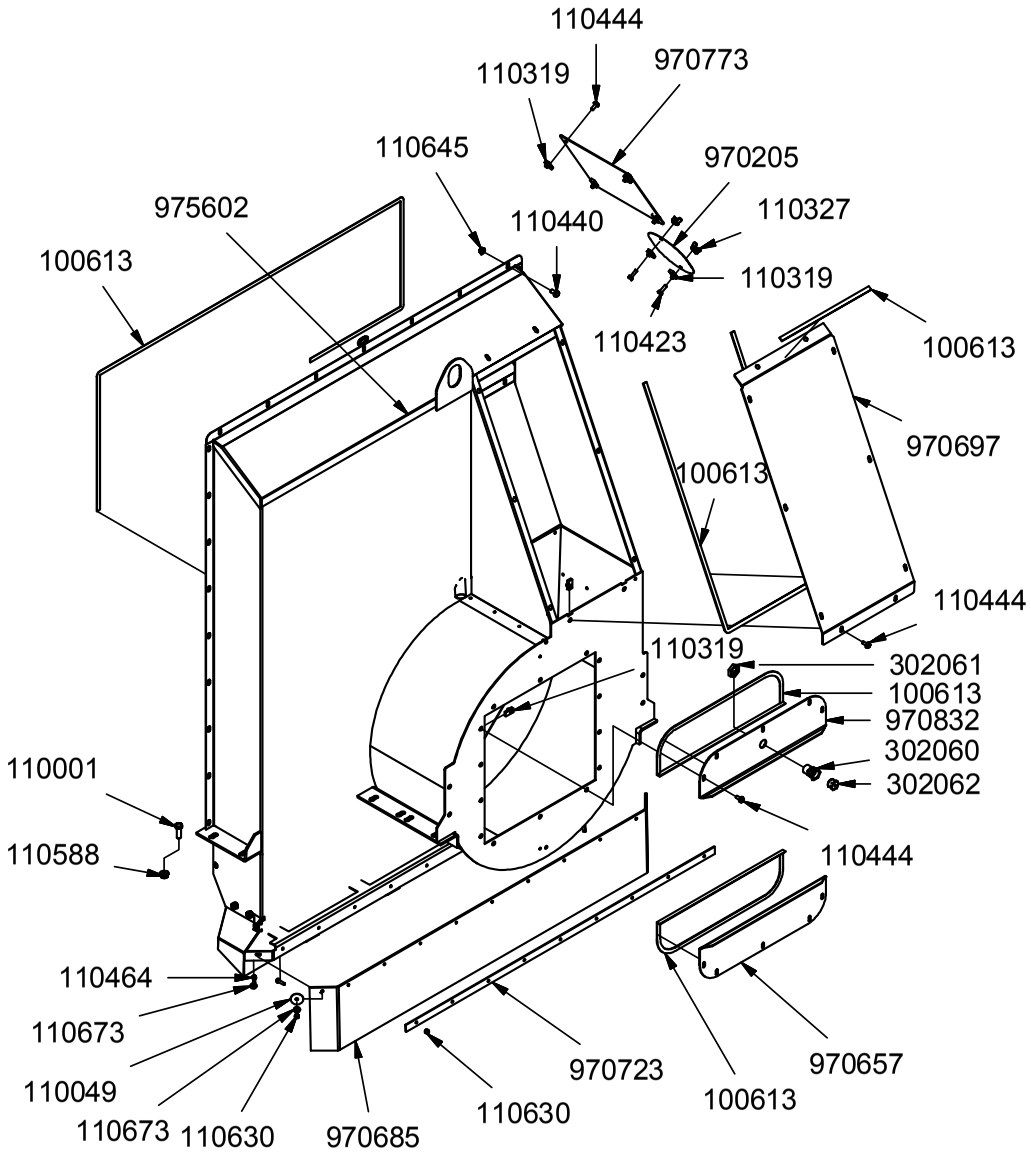


10/5/2012

HARPER TURF EQUIPMENT

Parts List		
PART #	QUANTITY	DESCRIPTION
100613	18 FT.	SEAL
110001	7	BOLT, 1/2-13 X 1.25, WIZ FLANGE
110049	2	WASHER, 5/16 X 1.50 FENDER
110319	34	NUT, 5/16-18 U-TYPE .75L
110327	2	NUT, 5/16-18 WING
110423	4	BOLT, 5/16-18 X 1.0
110440	22	BOLT, 3/8-16 X 1, WIZ FLANGE
110444	24	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110588	7	NUT, 1/2-13 WIZ FLANGE
110603	2	NUT, 5/16-18 LOCK (NYLON)
110630	11	NUT, 1/4-20 LOCK (NYLON INSERT)
110645	22	NUT, 3/8-16 WIZ FLANGE
110673	4	WASHER, 1/4" FLAT STANDARD
302060	1	SWIVEL, GARDEN HOSE-TO-PIPE
302061	1	LOCKNUT, 3/4 NPT
302062	1	PLUG, GARDEN HOSE
970205	1	NOZZLE ACCESS COVER
970657	1	PANEL, BLOWER FILLER
970685	1	MAIN DEBRIS FLAP
970697	1	DOOR, REMOVABLE
970723	1	CLAMP BAR, DEBRIS FLAP
970773	1	PLATE, HOSE OPTION COVER
970832	1	PANEL, FAN ACCESS
975602	1	BLOWER HOUSING WLDMNT

BLOWER HOUSING

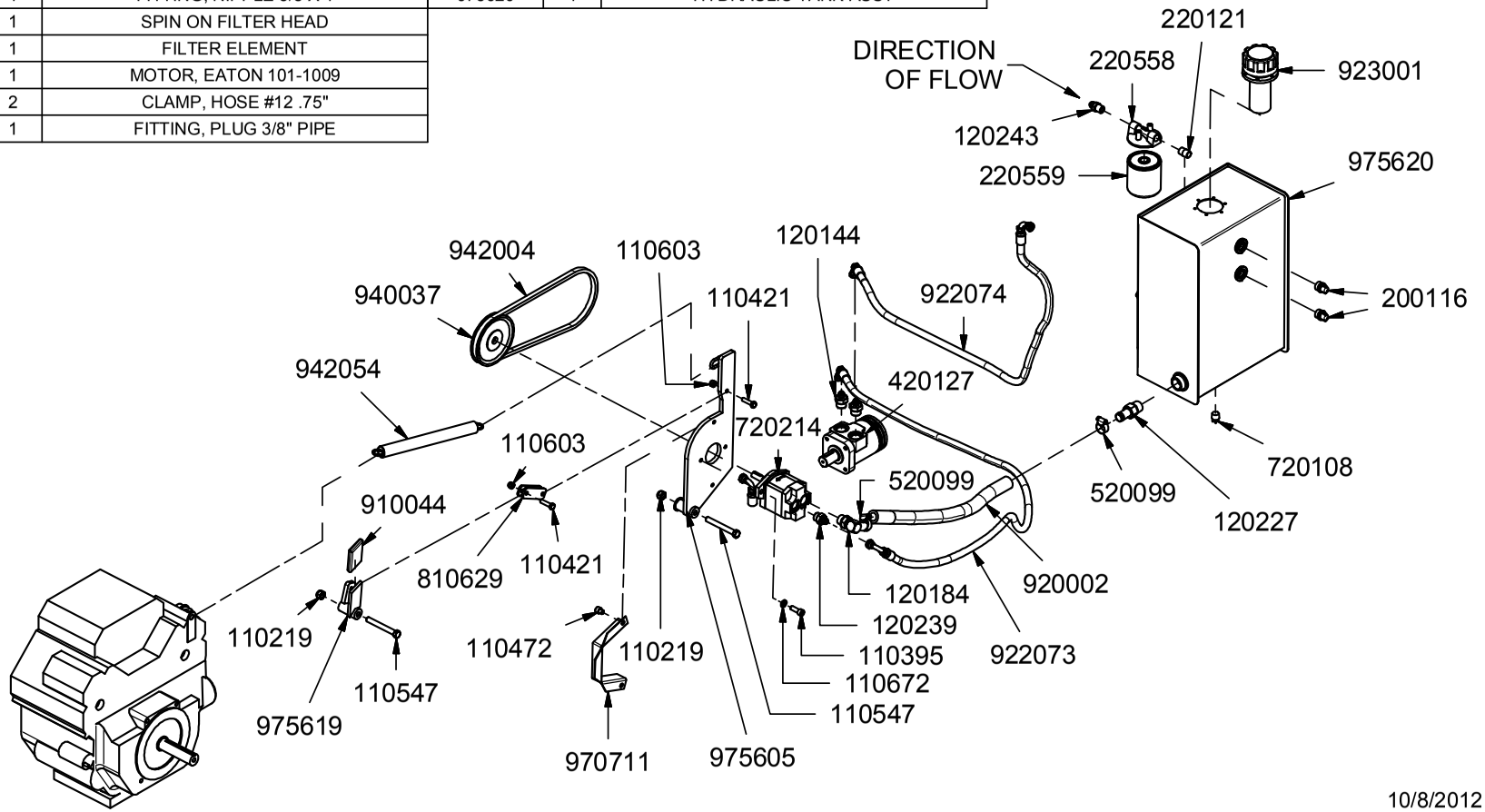


10/9/2012

BROOM HYDRAULICS

Parts List		
PART #	QTY	DESCRIPTION
110219	2	NUT, 7/16-14 LOCK NYLON INSERT
110395	2	BOLT, 3/8-16 X 1.0 SHCS
110421	2	BOLT, 5/16-18 X 1-1/4
110472	2	BOLT, 3/8-16 X .375 SHCS
110547	2	BOLT, 7/16-14 X 3.5
110603	9	NUT, 5/16-18 LOCK (NYLON)
110672	18	WASHER, 3/8" LOCK
120144	4	ADAPTER, 6MJ-10MB
120184	1	ADAPTER, 12BH-10MB90
120227	1	ADAPTER, 12BH-12MP
120239	1	ADAPTER, 6MJ-8MB
120243	1	ADAPTER, 6MJ-6MP
200116	2	SIGHT GLASS
220121	1	FITTING, NIPPLE 3/8 X 1
220558	1	SPIN ON FILTER HEAD
220559	1	FILTER ELEMENT
420127	1	MOTOR, EATON 101-1009
520099	2	CLAMP, HOSE #12 .75"
720108	1	FITTING, PLUG 3/8" PIPE

Parts List		
PART #	QTY	DESCRIPTION
720214	1	PUMP, .43 CI, AA
810629	2	HANDLE CLAMP
910044	3	COVER, VINYL .25 X 1.5 X 4 GRIP
920002	1	HOSE, .75-124 HWR X 20
922073	1	HOSE, .375 X66" 6FJX90M-6FJX90M
922074	1	HOSE, .375 X 48" 6FJX90M-6FJX90M
923001	1	BREATHER, FILLER CAP
940037	1	SHEAVE, 1A4.7 X .531 KSS
942004	1	BELT, A37
942054	1	SPRING
970711	1	BELT GUARD
975605	1	PUMP MOUNT WLDMNT
975619	1	PUMP DISENGAGE WLDMNT
975620	1	HYDRAULIC TANK ASSY

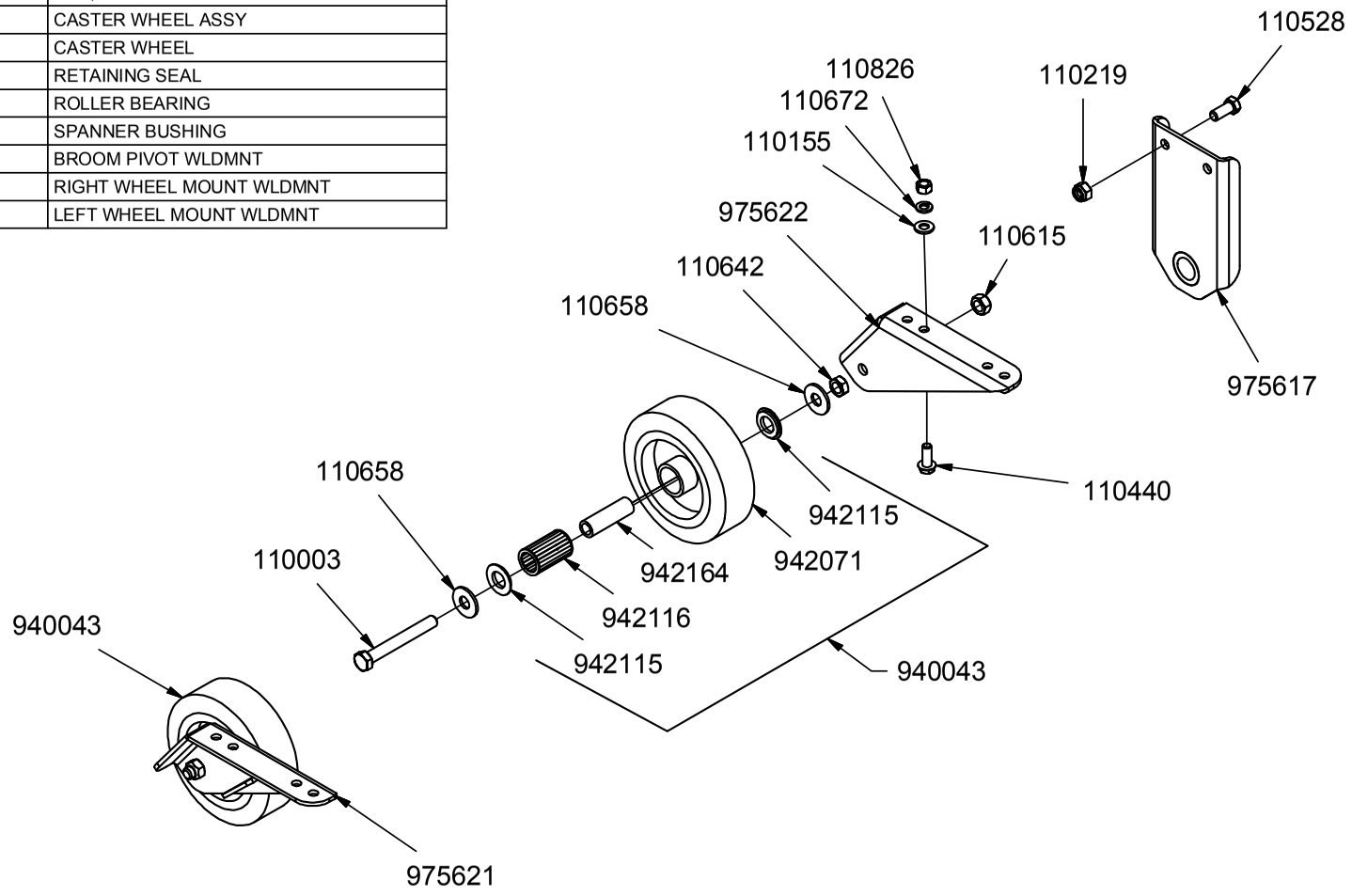


10/8/2012

HARPER TURF EQUIPMENT

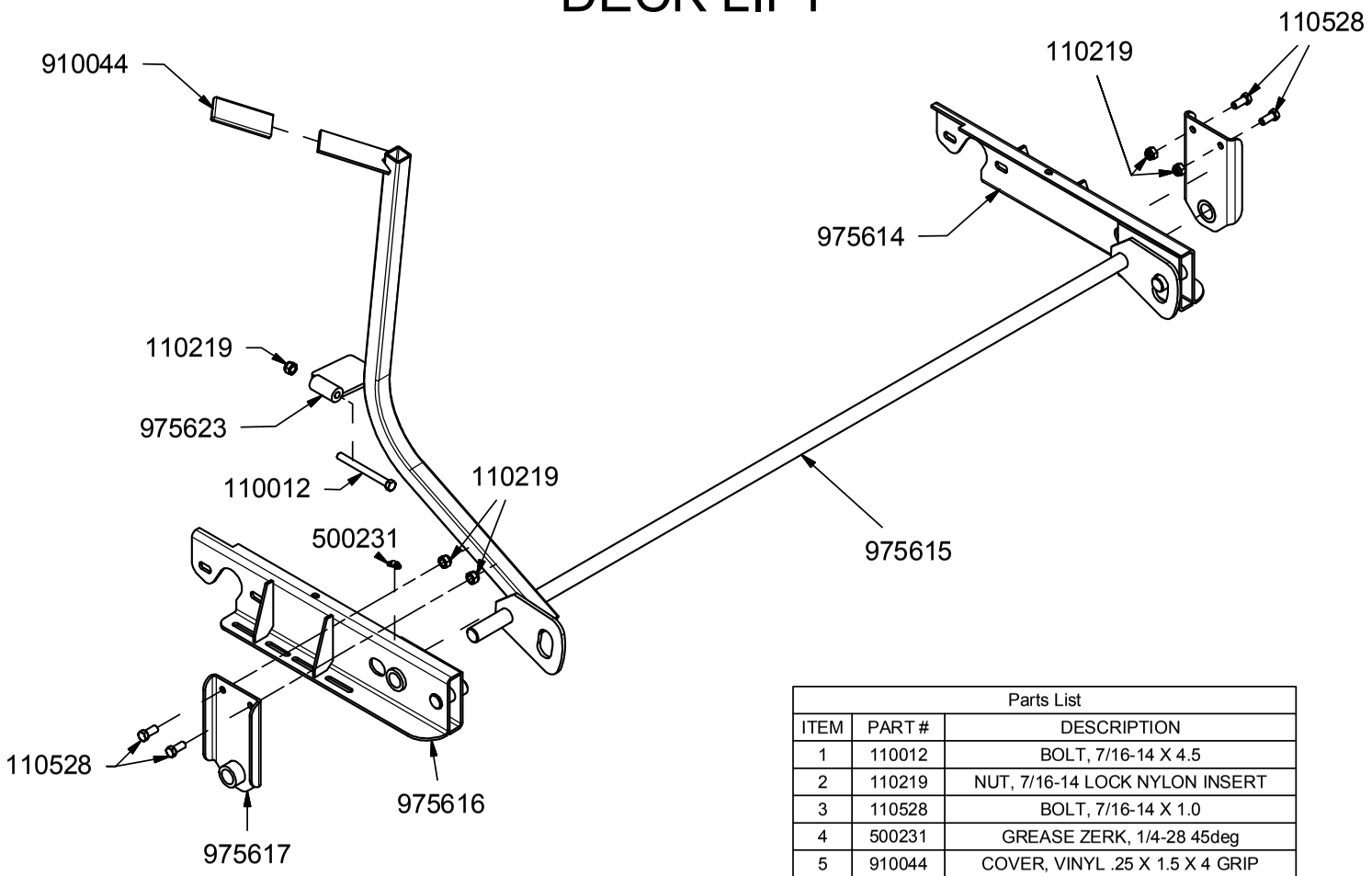
Parts List		
PART #	QUANTITY	DESCRIPTION
110003	2	BOLT, 1/2-13 X 4.0
110155	4	WASHER, 3/8" FLAT SAE
110219	4	NUT, 7/16-14 LOCK NYLON INSERT
110528	4	BOLT, 7/16-14 X 1.0
110612	4	NUT, 3/8-16 GR 2
110615	2	NUT, 1/2-13, UNITORQUE LOCK
110642	2	NUT, 1/2-13 HEX JAM GR 2
110658	4	WASHER, 1/2" FLAT STANDARD
110672	4	WASHER, 3/8" LOCK
110826	4	NUT, 3/8-16 GR 5
940043	2	CASTER WHEEL ASSY
942071	1	CASTER WHEEL
942115	2	RETAINING SEAL
942116	1	ROLLER BEARING
942164	1	SPANNER BUSHING
975617	2	BROOM PIVOT WLDMNT
975621	1	RIGHT WHEEL MOUNT WLDMNT
975622	1	LEFT WHEEL MOUNT WLDMNT

BROOM WHEELS



10/4/2012

DECK LIFT



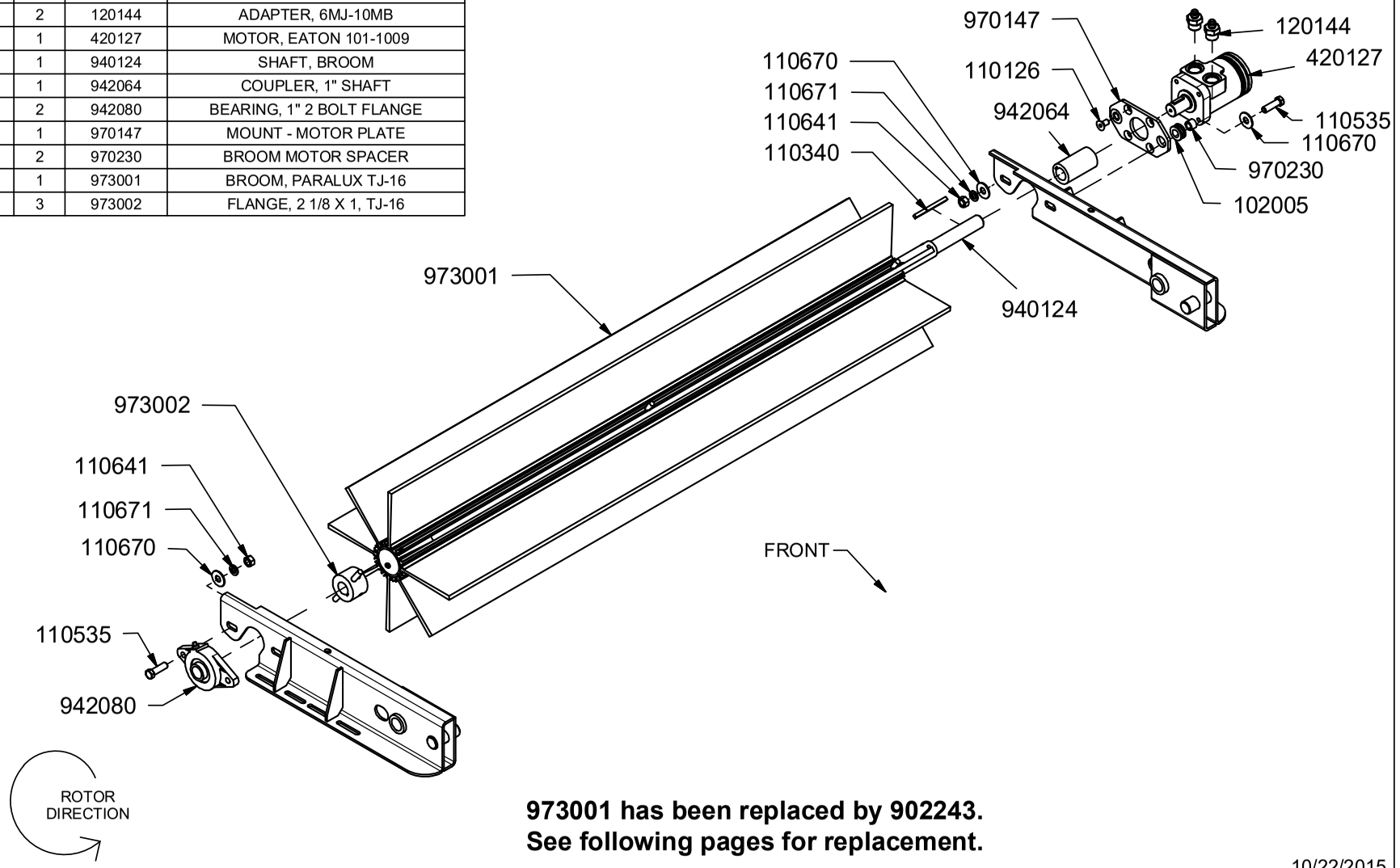
Parts List		
ITEM	PART #	DESCRIPTION
1	110012	BOLT, 7/16-14 X 4.5
2	110219	NUT, 7/16-14 LOCK NYLON INSERT
3	110528	BOLT, 7/16-14 X 1.0
4	500231	GREASE ZERK, 1/4-28 45deg
5	910044	COVER, VINYL .25 X 1.5 X 4 GRIP
6	975614	LEFT BROOM ARM WLDMNT`
7	975615	BROOM LIFT WLDMNT
8	975616	RIGHT BROOM ARM WLDMNT
9	975617	BROOM PIVOT WLDMNT
10	975623	BROOM LATCH WLDMNT

12/9/2015

BRUSH ROTOR

PART NUMBER: 900229

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	2	102005	GROMMET, RUBBER .875 OD X .625 ID
2	4	110126	BOLT, 3/8-16 X .75 FLT HD SKT HD
3	1	110340	KEY, 1/4 X 1/4 X 3.25
4	4	110535	BOLT, 7/16-14 X 1.5
5	4	110641	NUT, 7/16-14
6	6	110670	WASHER, 7/16" FLAT STANDARD
7	4	110671	WASHER, 7/16" LOCK
8	2	120144	ADAPTER, 6MJ-10MB
9	1	420127	MOTOR, EATON 101-1009
10	1	940124	SHAFT, BROOM
11	1	942064	COUPLER, 1" SHAFT
12	2	942080	BEARING, 1" 2 BOLT FLANGE
13	1	970147	MOUNT - MOTOR PLATE
14	2	970230	BROOM MOTOR SPACER
15	1	973001	BROOM, PARALUX TJ-16
16	3	973002	FLANGE, 2 1/8 X 1, TJ-16



973001 has been replaced by 902243.
See following pages for replacement.

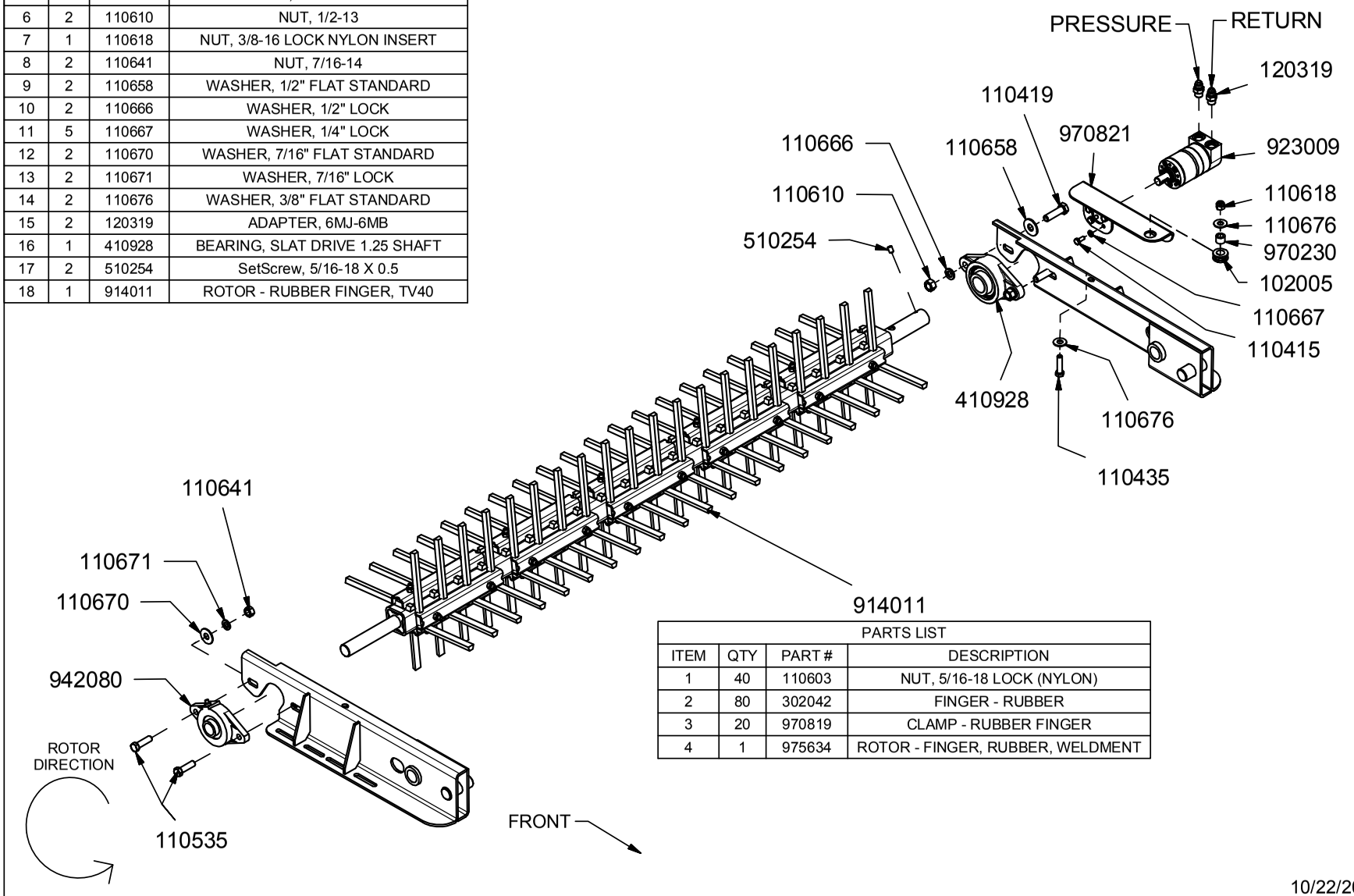
10/22/2015

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	1	102005	GROMMET, RUBBER .875 OD X .625 ID
2	5	110415	BOLT, 1/4-28 X .625
3	2	110419	BOLT, 1/2-13 X 1.75
4	1	110435	BOLT, 3/8-16 X 1.5
5	2	110535	BOLT, 7/16-14 X 1.5
6	2	110610	NUT, 1/2-13
7	1	110618	NUT, 3/8-16 LOCK NYLON INSERT
8	2	110641	NUT, 7/16-14
9	2	110658	WASHER, 1/2" FLAT STANDARD
10	2	110666	WASHER, 1/2" LOCK
11	5	110667	WASHER, 1/4" LOCK
12	2	110670	WASHER, 7/16" FLAT STANDARD
13	2	110671	WASHER, 7/16" LOCK
14	2	110676	WASHER, 3/8" FLAT STANDARD
15	2	120319	ADAPTER, 6MJ-6MB
16	1	410928	BEARING, SLAT DRIVE 1.25 SHAFT
17	2	510254	SetScrew, 5/16-18 X 0.5
18	1	914011	ROTOR - RUBBER FINGER, TV40

Parts List			
ITEM	QTY	PART #	DESCRIPTION
19	1	923009	MOTOR - 1.29 CID, ROTOR DRIVE
20	1	942080	BEARING, 1" 2 BOLT FLANGE
21	1	970230	BROOM MOTOR SPACER
22	1	970821	ARM - TORQUE, ROTOR, TV40

FINGER ROTOR

PART NUMBER: 900225

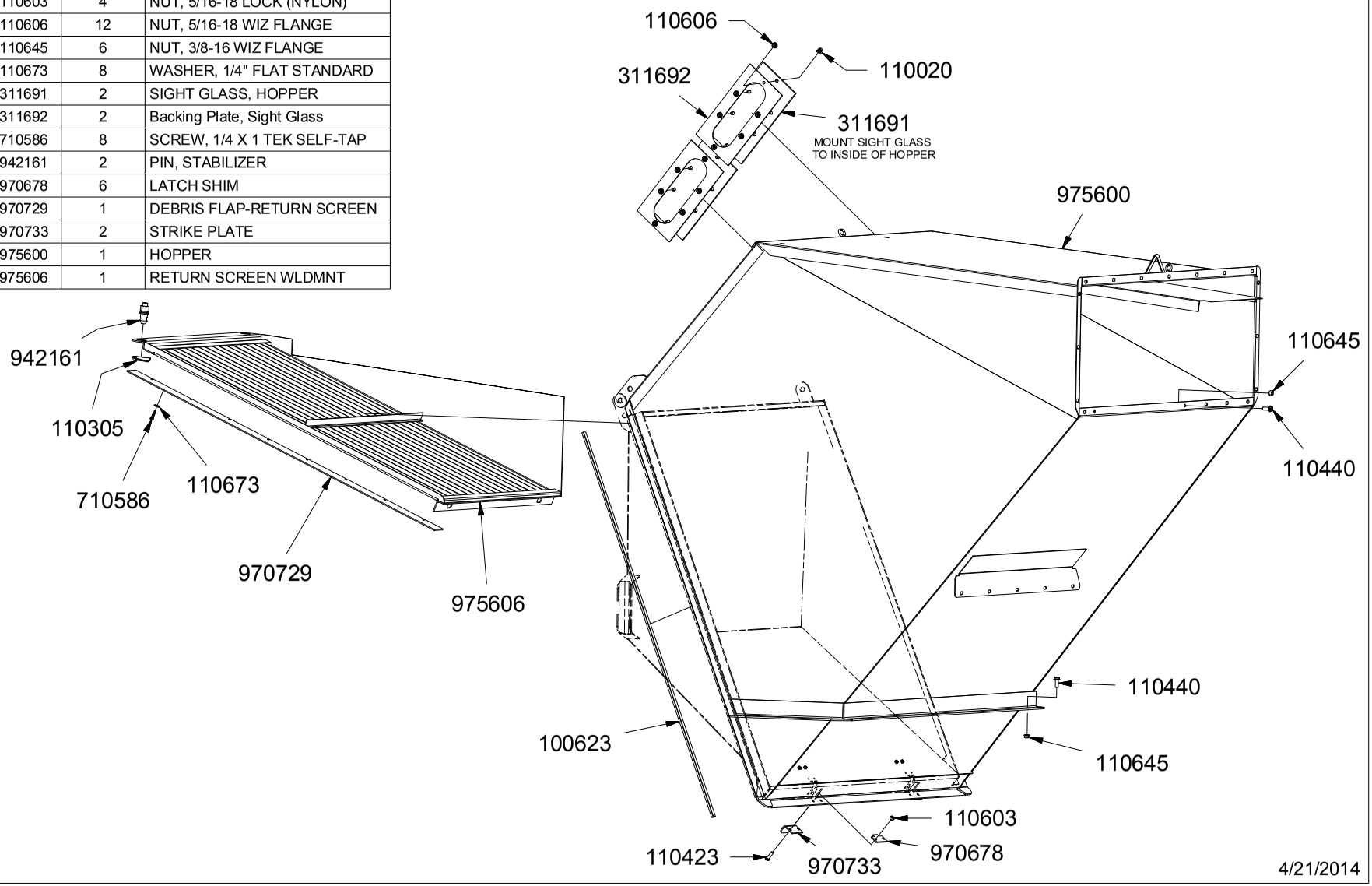


PARTS LIST			
ITEM	QTY	PART #	DESCRIPTION
1	40	110603	NUT, 5/16-18 LOCK (NYLON)
2	80	302042	FINGER - RUBBER
3	20	970819	CLAMP - RUBBER FINGER
4	1	975634	ROTOR - FINGER, RUBBER, WELDMENT

10/22/2015

Parts List		
PART #	QUANTITY	DESCRIPTION
100623	9 FT.	SEAL
110020	12	Bolt, 5/16-18 X 0.75 in Carriage
110305	2	Pin, Lynch 7/16 x 1 3/4
110423	4	BOLT, 5/16-18 X 1.0
110440	8	BOLT, 3/8-16 X 1, WIZ FLANGE
110603	4	NUT, 5/16-18 LOCK (NYLON)
110606	12	NUT, 5/16-18 WIZ FLANGE
110645	6	NUT, 3/8-16 WIZ FLANGE
110673	8	WASHER, 1/4" FLAT STANDARD
311691	2	SIGHT GLASS, HOPPER
311692	2	Backing Plate, Sight Glass
710586	8	SCREW, 1/4 X 1 TEK SELF-TAP
942161	2	PIN, STABILIZER
970678	6	LATCH SHIM
970729	1	DEBRIS FLAP-RETURN SCREEN
970733	2	STRIKE PLATE
975600	1	HOPPER
975606	1	RETURN SCREEN WLDMNT

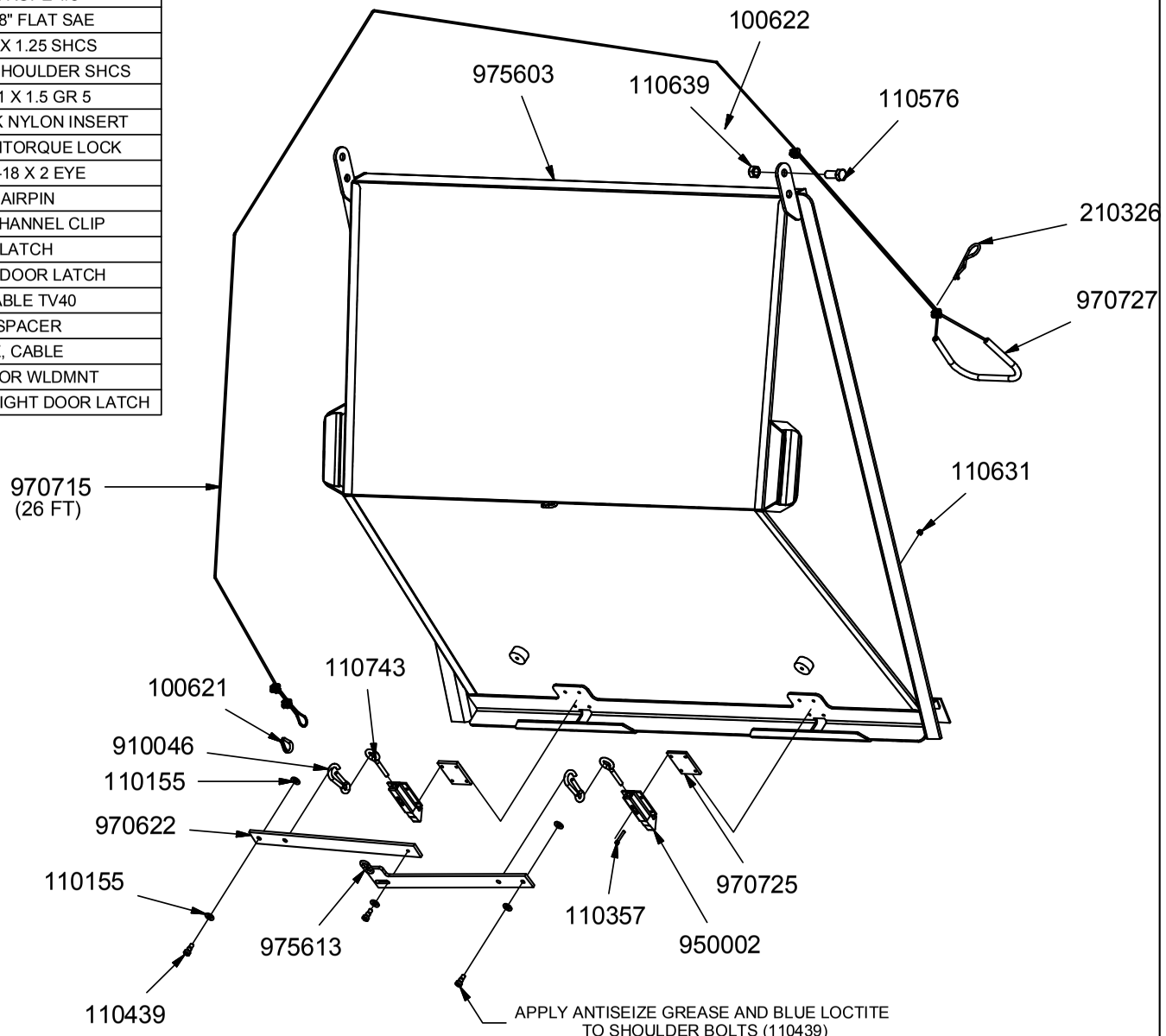
HOPPER & RETURN SCREEN



4/21/2014

HOPPER DOOR & LATCH

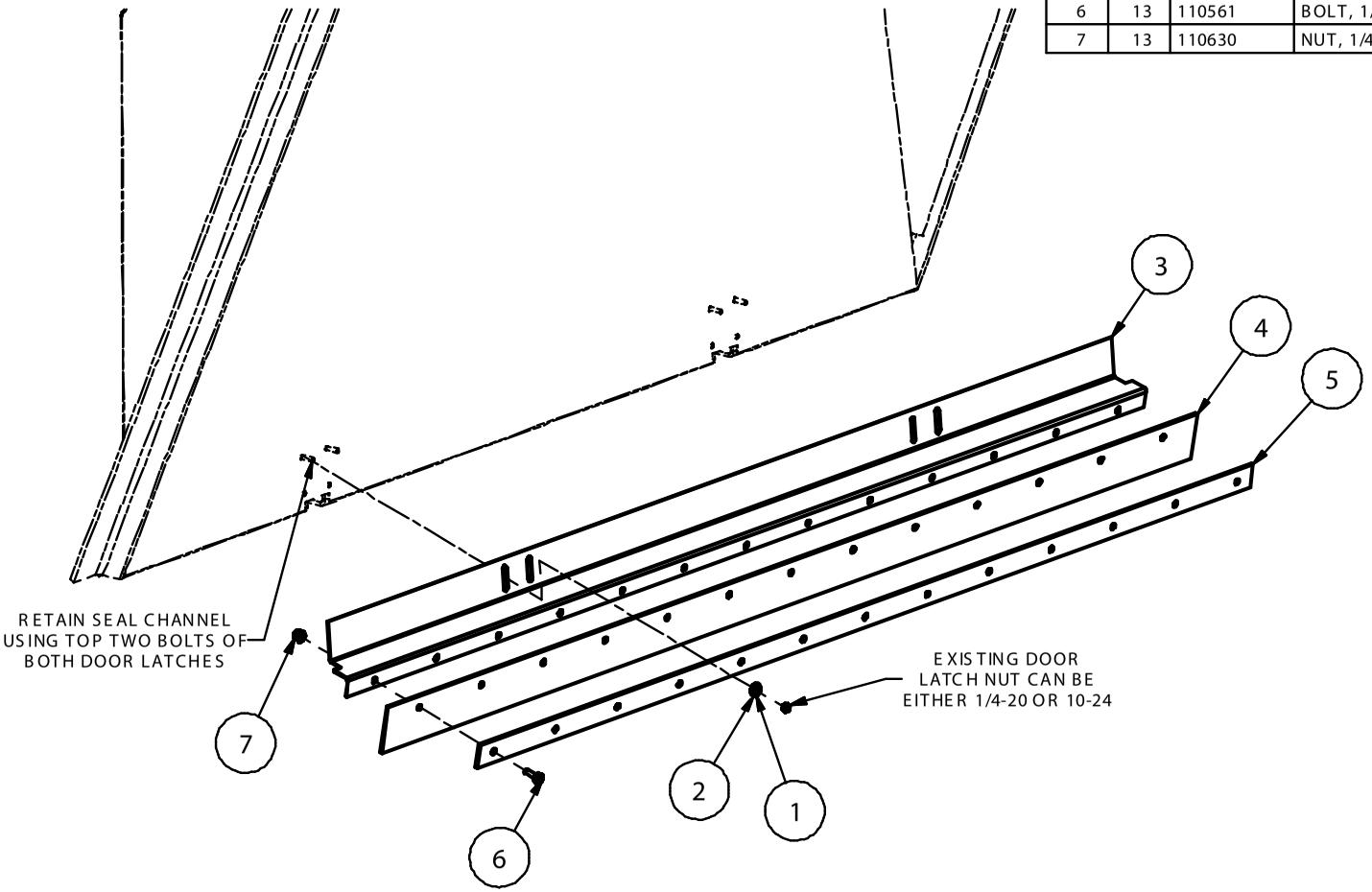
Parts List		
PART #	QUANTITY	DESCRIPTION
100621	1	THIMBLE, WIRE ROPE 1/8"
100622	4	CLIP, WIRE ROPE 1/8"
110155	5	WASHER, 3/8" FLAT SAE
110357	8	BOLT, 10-24 X 1.25 SHCS
110439	3	BOLT, 3/8 X 3/8 SHOULDER SHCS
110576	2	BOLT, 5/8-11 X 1.5 GR 5
110631	8	NUT, 10-24 LOCK NYLON INSERT
110639	2	NUT, 5/8-11, UNITORQUE LOCK
110743	2	BOLT, 5/16-18 X 2 EYE
210326	1	CLIP, HAIRPIN
910046	2	ENGAGING CHANNEL CLIP
950002	2	DOOR LATCH
970622	1	LEVER, LEFT DOOR LATCH
970715	1	LATCH CABLE TV40
970725	2	LATCH SPACER
970727	1	HANDLE, CABLE
975603	1	HOPPER DOOR WLDMNT
975613	1	LEVER WLDMNT, RIGHT DOOR LATCH



10/9/2012

975629 - TV40 DOOR SEAL ASSEMBLY

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	4	110090	WASHER, #10 FLAT STANDARD
2	4	110298	WASHER, 1/4" FLAT SAE
3	1	970744	ZCHANNEL, DOOR SEAL
4	1	972017	DOOR SEAL
5	1	970745	BACKING PLATE, DOOR SEAL
6	13	110561	BOLT, 1/4-20 X .75
7	13	110630	NUT, 1/4-20 LOCK (NYLON INSERT)



Instructions:

1) Remove nuts from top two bolts of each latch.

2) Use top two bolts of each latch to hold "Z" shaped seal assembly.

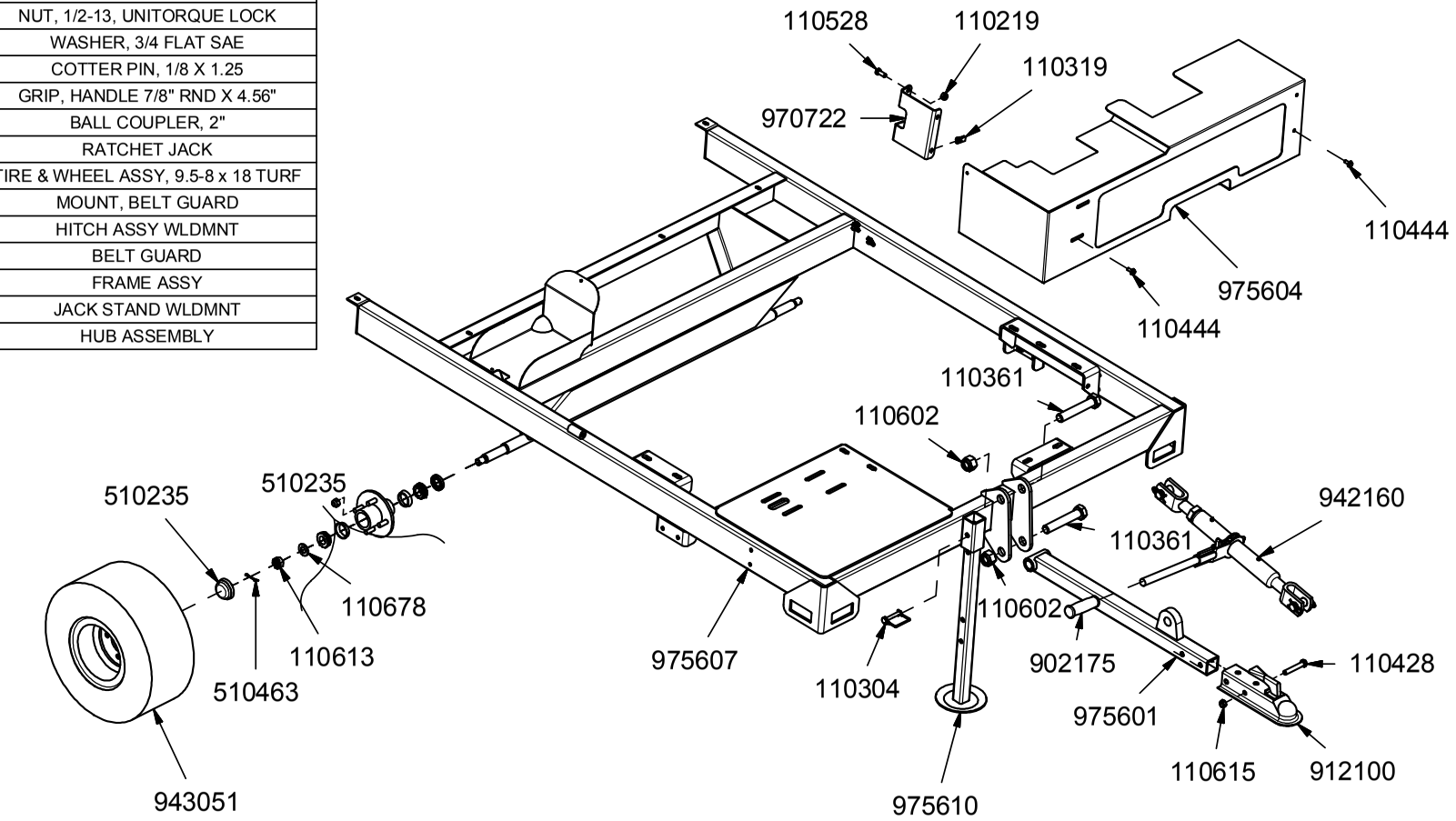
3) Set seal in center of slot initially. Adjust as needed. The seal should have good contact with hopper floor.

Instruction Sheet 975629

FRAME

Parts List		
PART #	QTY	DESCRIPTION
110219	9	NUT, 7/16-14 LOCK NYLON INSERT
110304	1	PIN, LOCK 3/8 X 2.5 SQ
110319	58	NUT, 5/16-18 U-TYPE .75L
110361	2	BOLT, 1-8 X 5.5
110428	2	BOLT, 1/2-13 X 3.0
110444	56	BOLT, 5/16-18 X 0.75, WIZ FLANGE
110528	6	BOLT, 7/16-14 X 1.0
110602	2	NUT, 1-8 LOCK NYLON INSERT
110613	2	NUT, CASTLE 3/4-16
110615	4	NUT, 1/2-13, UNITORQUE LOCK
110678	2	WASHER, 3/4 FLAT SAE
510463	2	COTTER PIN, 1/8 X 1.25
902175	1	GRIP, HANDLE 7/8" RND X 4.56"
912100	1	BALL COUPLER, 2"
942160	1	RATCHET JACK
943051	2	TIRE & WHEEL ASSY, 9.5-8 x 18 TURF
970722	1	MOUNT, BELT GUARD
975601	1	HITCH ASSY WLDMNT
975604	1	BELT GUARD
975607	1	FRAME ASSY
975610	1	JACK STAND WLDMNT
510235	2	HUB ASSEMBLY

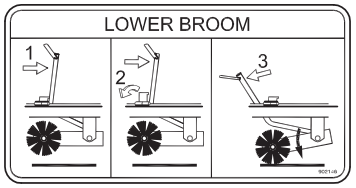
HUB ASSEMBLY (510235) PARTS		
PART #	QTY	DESCRIPTION
110617	4	NUT, 1/2-20 LUG
510465	2	BEARING CUP, 1.98 X .42
510466	2	BEARING CONE, TAPER 1.0 X .58
510467	1	SEAL, CR 12407
510469	1	DUST CAP
511073	1	HUB



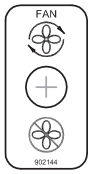
(TIRE & WHEEL ASSY
PRIOR TO S/N 14A01: 943025)

3/4/2014

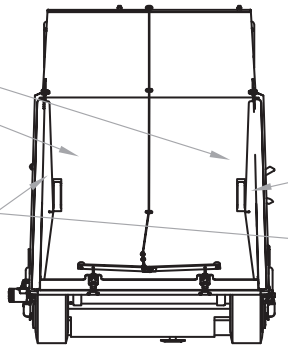
TV40 DECALS



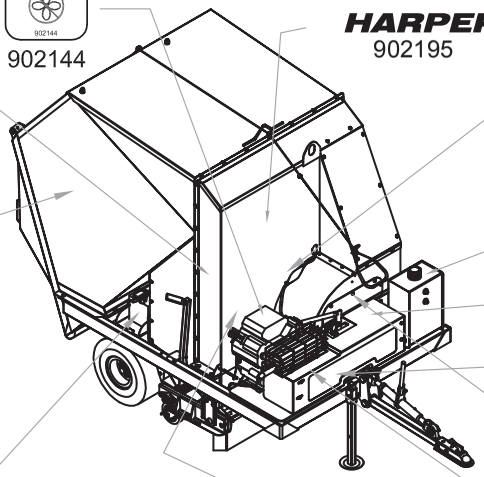
902146



902144



902147
ON BOTH SIDES
OF DOOR



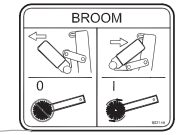
HARPER
902195

MANUAL FUEL PRIMER BULB

902071

THIS MACHINE CONTAINS BIODEGRADABLE OIL

902077



902145

HARPER
902195
TURBO VAC
Turf Sweeper
902084

TV40
902086

RIGHT SIDE

HARPER
902195
TURBO VAC
Turf Sweeper
902084

TV40
902085

LEFT SIDE

800195

CAUTION
DO NOT START THIS ENGINE UNTIL BATTERY HAS BEEN SERVICED OR WARRANTY WILL NOT BE VALID

902039

800191

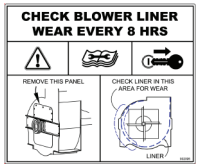
900007

902149

902148

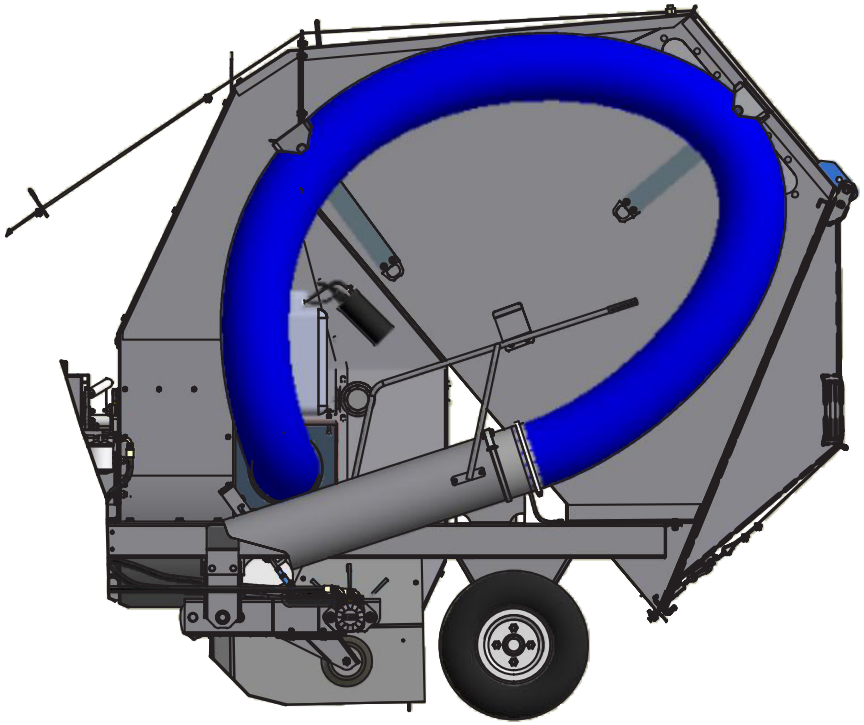
500257

400014
UNDER GUARD ON
ENGINE MOUNT PLATE



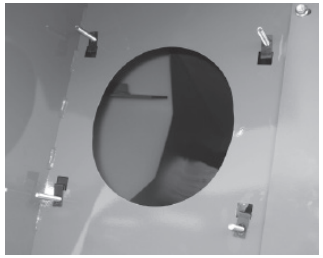
902095

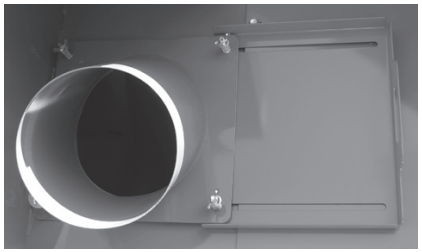
REMOTE HOSE OPTION



Installation Instructions:

1. Remove bolts and plate covering hole in TV40 frame cut for hose option.
2. Thread 5/16" x 2 ½" bolts (4) into fasteners from inside out.





3. Lay slide door onto rear bolts and place hose adapter on top.
4. Use a spring, flat washer and wing nut on each bolt (4).

PARTS LIST		
Part Number	Qty	Description
102022	1	COVER, VINYL 5/8" X 4 3/4"
110069	6	WASHER, 5/16" FLAT SAE
110174	16	NUT, 1/4-20, UNITORQUE LOCK
110311	2	CLAMP, HOSE #912 8.00"
110319	1	NUT, 5/16-18, U-TYPE
110327	5	NUT, 5/16 WING
110427	4	BOLT, 5/16-18 X 2.5 TAP
110437	1	BOLT, 3/8-16 .75 WIZ FLNG ZINC
110451	4	BOLT, 1/4-20 X .5, MACHINE HEAD
110561	6	BOLT, 1/4-20 X .75
110539	2	BOLT, 7/16-14 X 1.25
110561	6	BOLT, 1/4-20 X .75 HHCS ZINC
110623	1	NUT, 5/16-24
110645	6	NUT, 3/8-16, WIZ FLNG
110667	4	WASHER, 1/4 LOCK
110673	8	WASHER, 1/4" FLAT STANDARD
110731	1	KEY, 1/8 X 1/8 X 1
112043	10	SCREW, 1/4-20 X 3/4, BH TORX, ZINC
211132	2	BUSHING, .625 X .5
510176	1	COTTER PIN, 1/8 X 1
510460	1	SET SCREW, 1/4-20
550046	1	CLEVIS YOKE, 5/16-24
550048	1	CLEVIS PIN, 5/16
550050	1	COTTER PIN, 3/32 X 1
902010	1	HOSE, 8 INCH
902113	1	CLAMP, NOZZLE SWIVEL
902114	1	ADAPTOR, HOSE SWIVEL
910044	1	COVER, VINYL .25 X 1.5 X 4 GRIP
970628	2	FLAP PIVOT BLOCK
970765	1	BRACKET, NOZZLE SUPPORT
970768	1	CRADLE, REAR HOSE
970769	1	HANGER, NOZZLE HANDLE
970770	2	RING, HOSE HANGER
970774	1	SLIDE, HOSE OPTION
970775	2	HANGER STRAP
970779	1	NOZZLE TUBE
972018	4	SPRING, COMPRESSION
975132	1	FRONT HOSE CRADLE WELDMENT
975133	1	SIDE HOSE ADAPTER WELDMENT
975134	1	NOZZLE HANDLE WELDMENT
975608	1	FLAP WELDMENT
975609	1	FLAP ARM WELDMENT
975612	1	FLAP HANDLE WELDMENT

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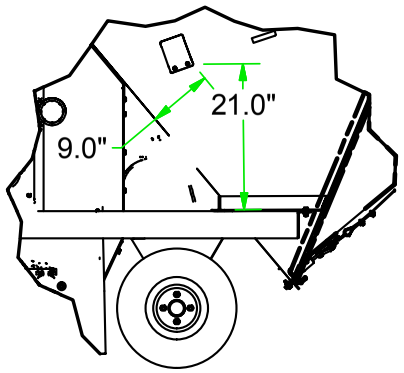
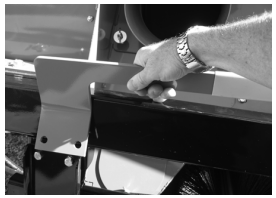
5. Locate nozzle hangers and hose cradles as indicated.



NOTE: NOZZLE HANDLE HANGER PLACEMENT

FRONT HOSE CRADLE

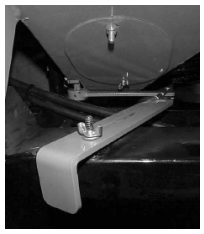
NOZZLE HANDLE HANGER



NOZZLE SUPPORT

6. Install hose and nozzle as indicated.
7. Remove knock-outs from right and left side of blower housing.
8. Install flap and flap handle as indicated.

KNOCK-OUTS



FLAP HANDLE

NOTE: REAR HOSE HANGER PLACEMENT

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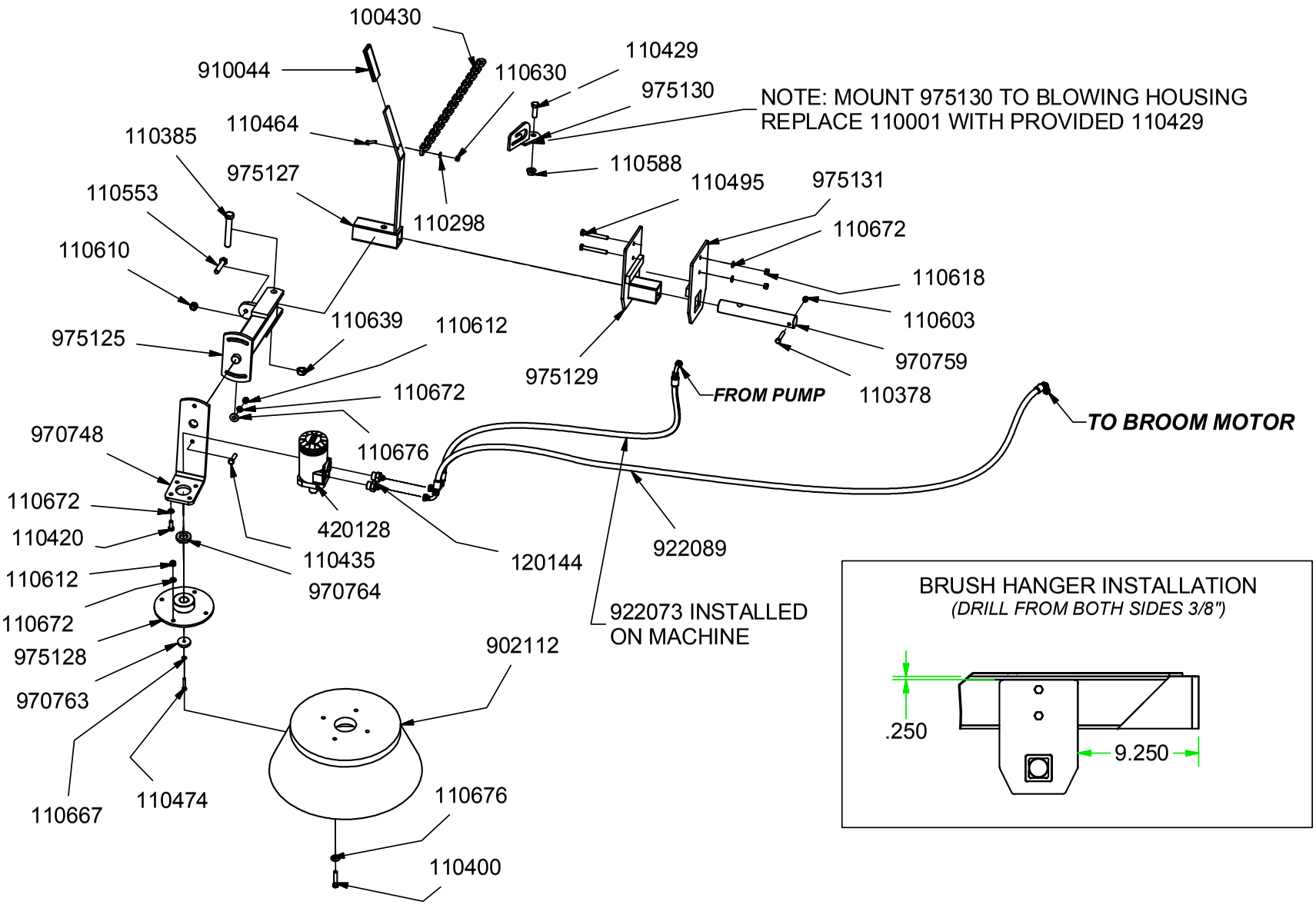
EDGE BRUSH OPTION - TV40



9/16/2015

NOTES

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