

Operator's



BIG VAC
72-000-A

SN: 72001

May 2001

Updated April 2014

Product Support:

Hwy 55 & Poplar Ave; Cameron WI 54822

1-800-891-9435 productsupport@smithco.com

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Introduction

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Thank you for purchasing a **SMITHCO** product.

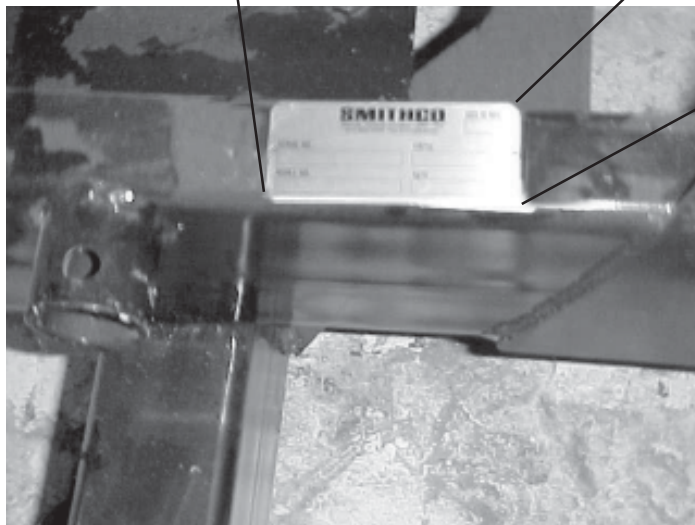
Read this manual and all other manuals pertaining to the Big Vac carefully as they contain safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage.

Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

All **SMITHCO** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Big Vac is located on the front cross member of the frame.

For easy access record your Serial and Model numbers here.

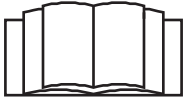




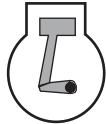


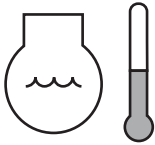
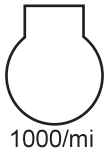
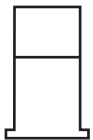





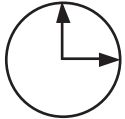
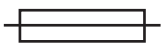





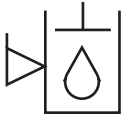


SMITHCO		DATE OF MFG.
WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069		<input type="text"/>
SERIAL NO.	kW/hp	
<input type="text"/>	<input type="text"/>	
MODEL NO.	kg/lb	
<input type="text"/>	<input type="text"/>	


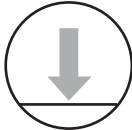


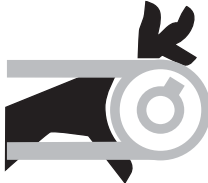
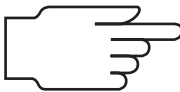


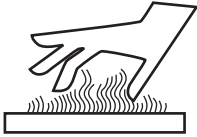
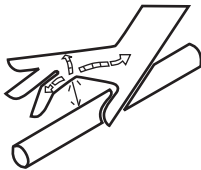
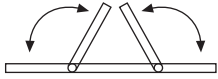
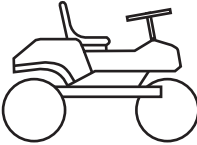



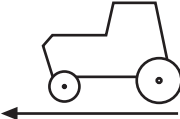





Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts

SYMBOLS

	Read Operator's Manual		Electrical Power		No Electrical Power
	Engine - Stop		Engine - Start		Engine - Run
	Engine Oil		Temperature Light		Water Temperature
	RPM		Gasoline		Diesel
	Glow Plug - On		Glow Plug - Off		Glow Plug
	Hour Meter		Hour Meter		Fuse
	Hand Throttle		Choke - Closed		Choke - Open
	Park Brake		Park Brake Release		Hydraulic Oil Level
	Off / Stop		On / Start		

	Up/Down Arrow		Down/Lower		Up/Raise
	No Smoking		Moving Parts		Manual Operation
	Pinch Point		Step		Hot Surface
	Hydraulic Fluid Penetration		Lift Arm		Tractor
	Engage		Disengage		PTO
	Ground Speed		Fast		Slow
H	High	L	Low	F	Forward
R	Reverse	N	Neutral		Warning Danger Caution

SAFE PRACTICES

1. It is your responsibility to read this manual and all publications associated with this machine (engine, accessories and attachments).
2. Never allow anyone to operate or service the machine or its attachments without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary Personal Protective Equipment (PPE) on your head, eyes, ears, hands and feet. **Ear and eye protection are required.** Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
10. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
 - A. Use extra caution in backing up the vehicle. Ensure area is clear.
 - B. Do not stop or start suddenly on any slope.
 - C. Reduce speed on slopes and in sharp turns. Use caution when changing directions on slopes.
 - D. Stay alert for holes in the terrain and other hidden hazards.
 - E. Operate equipment up and down slopes, never across the face.
11. Before leaving operator's position for any reason:
 - A. Disengage all drives.
 - B. Lower all attachments to the ground.
 - C. Shut engine off and remove the ignition key.
12. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
13. The rubber fingers, sweeper and vacuum pick up and propel debris and small objects in the machines path during operation. Keep the area of operation clear of all bystanders.
14. Never carry passengers.
15. Use parts and materials supplied by SMITHCO only. Do not modify any function or part.
16. Avoid sharp turns. Watch the tires of the tractor while turning to make sure they do not contact the tongue of the Big Vac.
17. Shut down power source before attempting to unclog any part of the machine.
18. If reel deck and/or blower began to vibrate abnormally, immediately shut off power and determine the cause.

These machines are intended for professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.



1. Always disengage the PTO, shut off engine and remove the keys before leaving the tractor seat.
2. Keep the tractor's master shield in place at all times.
3. Missing or damaged shielding is the main reason for driveline entanglement. **Keep All Guards** on and in good condition. Check guards frequently.
4. **Never** step across a rotating powershaft. Always walk around the revolving shaft even if guards are in place.
5. Dress for safety. Do not wear loose fitting clothes or jewelry and keep long hair covered or pulled back.
6. The tractor drawbar should be adjusted to the length specified in the driven machine's manual. This will help prevent driveline stress and separation on uneven terrain and in tight turns.
7. A PTO shaft may break or separate during operation if improperly installed or adjusted. Be sure PTO shaft is installed properly.
8. Never perform maintenance or adjustments until both the driveline and the machinery have stopped moving.
9. Warn anyone who might come near an operating PTO about the entanglement hazard.
10. Regularly test driveline guards by spinning or rotating them to ensure they have not become stuck to the shaft.
11. Always use the driveline recommended for your machine. Never switch drivelines among different machines.
12. Reduce PTO shaft abuse by observing the following:
 - a. Avoid tight turns that pinch rotating shafts between the tractor and machine.
 - b. Keep excessive telescoping to a minimum.
 - c. Engage power to the shaft gradually.
 - d. Avoid over tightening of slip clutches on PTO driven machines.

SPECIFICATIONS FOR BIG VAC

WEIGHTS AND DIMENSIONS

Length	180" (458 cm)
Width	84" (214 cm)
Height	87" (221 cm)
Weight	3500 lb (1588 kg)

SOUND LEVEL

At Ear Level	92 dB (Use ear protection while operating)
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PTO SHAFT

Maximum RPM	540
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TIRES & WHEELS

Two 26.5 - 1400 x 12 (18 psi (1.3 bar)) Fairway Type Turf Tires
Castor: 6 x 12 (20 psi (1.4 bar))

FLUID CAPACITY

Hydraulic Fluid	64 quarts (60,5 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil

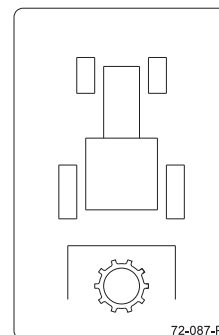
OPTIONAL EQUIPMENT

- 72-001 Combination Verticut and Sweeper Head
- 72-002 Rubber Finger Sweeper Head
- 72-245 2⁵/₁₆ Ball Hitch



The Big Vac arrives from **SMITHCO** with some setup required.

1. The PTO shaft and the rubber boot that goes around the blower and the reel need to be installed.
2. You will need a 40 HP (minimum) tow vehicle to remove the Big Vac from the trailer.
 - a. **Clevis Hitch** - You will need a $\frac{3}{4}$ " diameter by 4" pin with some type of lock.
 - b. **Ball Hitch (optional)** - You will need a $2\frac{5}{16}$ " ball and a locking pin for the coupler.
3. Crank the jack on the Big Vac up so you can hook to tow vehicle.
4. Check the tire pressure. **Big Vac:** 18 psi (1.3 bar) **Castor Wheels:** 20 psi (1.4 bar).
5. Check hydraulic fluid level in tank. Look at the sight gauge on the front left side of the tank. The oil level should be at 90°C (194°F). If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
6. Machine should be greased before starting. See Maintenance part of manual.
7. Lower reel all the way down. Place rubber boot onto the bottom of the blower housing. Raise the reel up $\frac{3}{4}$ of the way. Stretch rubber boot around lip on reel. Lift and lower several times to ensure boot is on properly.
8. When installing PTO shaft be sure the end with the **tractor decal (72-087) goes to the tow vehicle**. If PTO Shaft is put on wrong it will bust when engaged.
9. Read operating instructions before starting.



OVERLOADING DEBRIS HOPPER AND WEAR ON VACUUM HOUSING

OVERLOADING DEBRIS HOPPER

Smithco Sweeper-Vacs are designed to carry the following maximum loads:

Model 72-000 Big Vac	1500 lbs. (608 kg)
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PLEASE NOTE THE FOLLOWING:

1. Loads heavier than that will damage the unit.
2. Such damage is not covered by warranty.
3. Overloading is particularly easy when collecting aerifier cores.
4. The hoppers on the Big Vac and V62 are large in order to hold 7 and 4 cubic yards respectively, of thatch, grass clippings, leaves and trash.
5. They will not hold 7 or 4 cubic yards of aerifier cores.
6. The maximum depth (in the debris hopper) of aerifier cores is:

Model 72-000 Big Vac	12 in. (30 cm)
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VACUUM HOUSING WEAR

The Big Vac & V62 are fitted with a wear resistant liner in the vacuum housing. This will provide additional housing life. Be sure the following points are explained to the user:

1. The vacuum housing and impeller must be cleaned each time the unit is used so the housing liner is inspected daily. Only Smithco Sweeper-Vacs provide a clean out/inspection port for easy inspection and cleaning.
2. When bare steel is visible at any point in the housing lining, the lining must be replaced. It is expected the liner will wear and be replaced. It is a vast improvement over competitive units with no liners.
3. Replacement of the liner or the vacuum housing due to wear is normal and is not covered by warranty.
4. Collection of aerifier cores causes extreme wear on the liner (and if unchecked, on the housing).
5. Caution users that, while Smithco Sweeper-Vacs do an excellent job collecting cores, the lining (and the housing) will wear quickly in such use.

RUBBERIZED BOOT

The rubberized boot between main unit and sweeper head is subject to wear and damage from debris. Unless defective, replacement of this boot is not covered by warranty.

PARTS MANUALS AVAILABLE ONLINE AT smithco.com



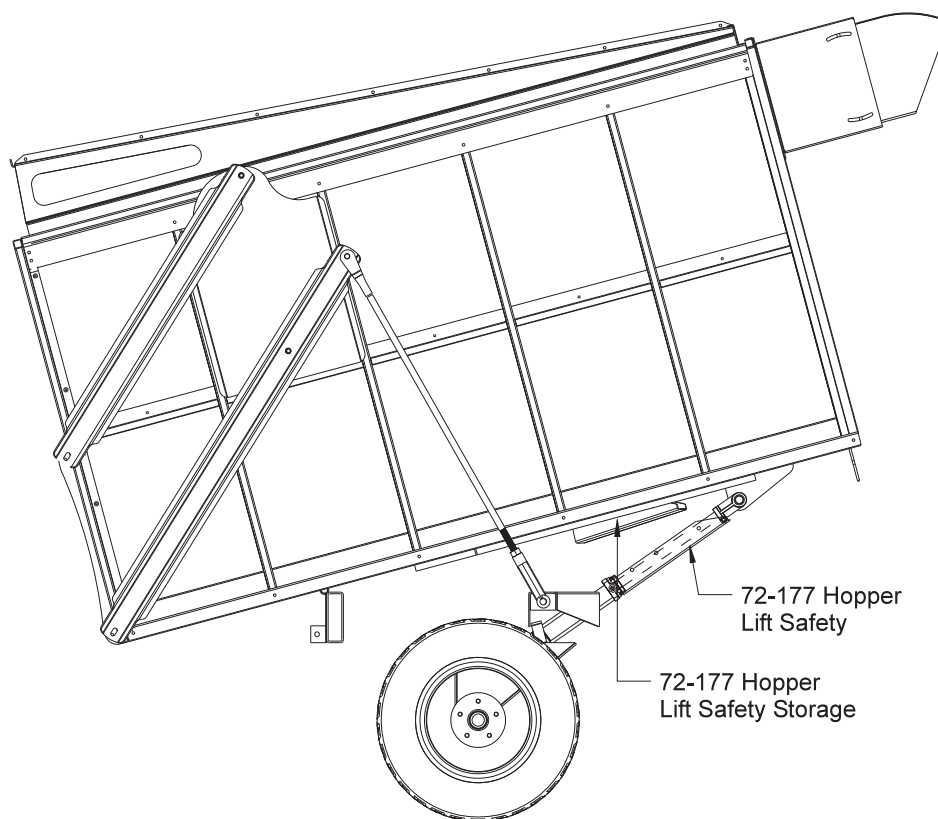
CONTROLS & INSTRUMENTS

- A. **Hopper Lever** - The hopper lever is used to lift and lower the hopper which also opens and closes the tailgate. Refer to decal for direction.
- B. **Finger Reel Off-On Valve** - Turns the reel on or off. Refer to decal for direction.
- C. **Deck Lift Lever** - The deck lift lever is used to raise and lower the reel. Refer to decal for direction.
- D. **Thatch Reel Off-On Valve** - Turns the reel on or off. Refer to decal for direction.



HOPPERLIFT SAFETY

The Hopper Lift Safety is used to support the ram on the hopper bottom in the extended position so you may service or repair the machine under the hopper. When not in use the Hopper Lift Safety can be stored on the hopper bed frame.



Before operating this machine, become familiar with all controls and functions of this unit and the tow vehicle. Also complete all maintenance requirements and read all safety warnings. By knowing both machines thoroughly, how it operates and by doing the prescribed maintenance steps, you can expect relatively trouble-free operation for years to come.

TOWVEHICLE

You will need a 40 HP minimum tow vehicle.

1. **Clevis Hitch** - You will need a $\frac{3}{4}$ " diameter by 4" pin with some type of lock.
2. **Ball Hitch** - You will need a $2\frac{5}{16}$ " ball and a locking pin for the coupler.

DAILYCHECKLIST

1. Check engine oil level in tow vehicle. Add as needed. **DO NOT OVERFILL.**
2. Tire pressure should be 18 psi (1.3 bar) on Big Vac tires and 20 psi (1.4 bar) on castor wheels.
3. Check hardware for loose or missing nuts, bolts, screws, etc., and tighten or replace as needed.
4. Inspect hydraulic lines for damage or leaks. Never use hands to inspect leaks.
5. Check hydraulic fluid level in tank. Look at the sight gauge on the front left side of the tank. The oil level should be at 90°C (194°F). If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
6. Check controls for smooth, proper working operation. Lubricate as needed.
7. Check and clean all debris from blower housing.

ADJUSTMENT OF BELT TENSIONER

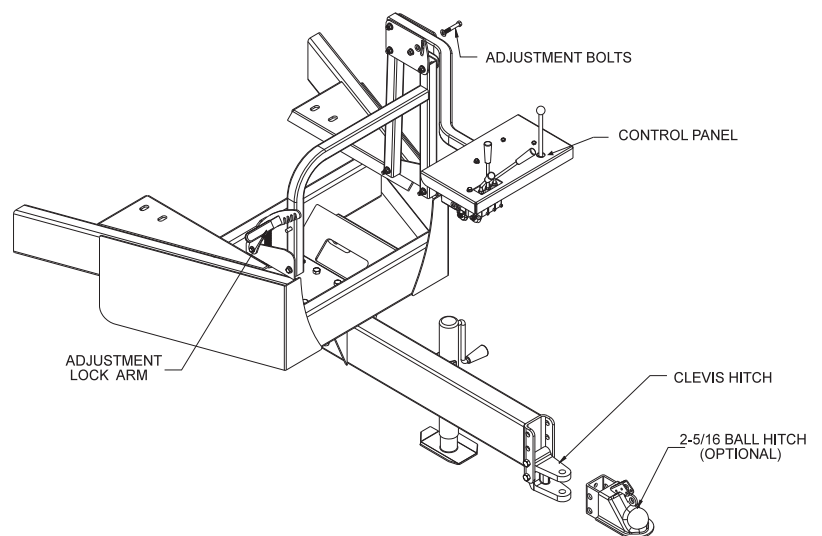
There are four maximum belt tensioners on the Big Vac. Two control the tension on the belts on the blower housing, one each on the finger reel and the thatcher reel. The proper tension of the idler should be 12 to 15 as per the gauge (A) on the side of the tightener. Over tightening the belt will shorten the life of the belt and the machine may not perform to the best of its ability. To adjust belt tensioner, loosen bolt holding tensioner. Bring idler pulley tight to belts and turn tensioner into belts to 15°. Tighten holder bolt.



(A)

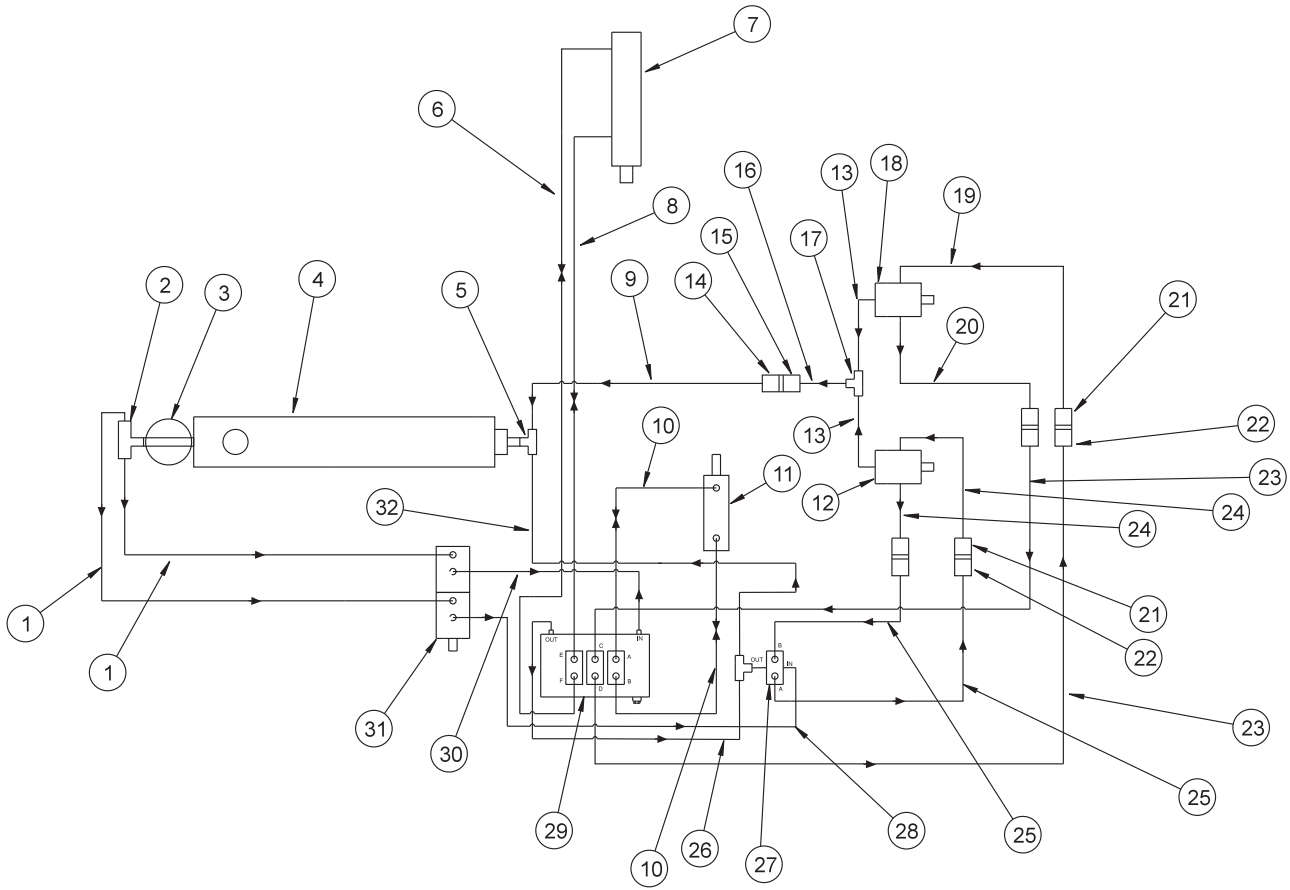
CONTROL PANEL ADJUSTMENT ARM

On the right hand side of machine is the adjustment lock arm, by lifting up you can adjust the control panel by moving it forward or rearward. Make certain that the lock arm is locked back in place after adjustment. For up and down adjustment loosen the four adjustment bolts place the control panel to where you want it and tighten the four bolts.



HITCHOPTIONS

You may use the clevis hitch that is shipped with your machine or a $2\frac{5}{16}$ " ball hitch that is an optional accessory. Both mount in the same location with three different bolt hole options.



HYDRAULIC PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	72-079	Suction Hose	2
2	18-276	Tee Fitting 1 ¹ / ₄	1
3	60-215	Filter	1
	60-334	Filter Element (replacement only)	1
4	72-096	Hydraulic Tank	1
5	34-058	Swivel Tee	1
6	72-065	Hydraulic Hose	1
7	72-040	Cylinder	1
	72-040-01	Seal Kit	1
	72-040-02	Pin with Clips (part of 72-040)	2
8	72-064	Hydraulic Hose	1
9	72-070	Hydraulic Hose	1
10	72-071	Hydraulic Hose	2
11	10-187	Hydraulic Cylinder	1
	14-273	Seal Kit	1
12*	72-022	Hydraulic Motor (Thatch Reel)	1
	78-219-01	Seal Kit	1
	78-219-02	Drive Coupler	1
13	72-073	Hydraulic Hose	2
14	72-044	Quick Coupler ³ / ₈ Male End	1
15	72-045	Quick Coupler ³ / ₈ Female End	1
16	72-072	Hydraulic Hose	1
17	18-170	Tee Fitting	1
18*	78-219	Hydraulic Motor (Reel)	1
	78-219-01	Seal Kit	1
	78-219-02	Drive Coupler	1
19	72-075	Hydraulic Hose	1
20	72-074	Hydraulic Hose	1
21	72-043	Quick Coupler ¹ / ₂ Male End	4
22	72-046	Quick Coupler ¹ / ₂ Female End	4
	HRR-150	Retaining Ring 1 ¹ / ₂ " External	8
23	72-068	Hydraulic Hose	2
24	72-074	Hydraulic Hose	2
25	72-067	Hydraulic Hose	2
26	72-063	Hydraulic Hose	1
27	33-066	Hydraulic Valve	1
28	72-069	Hydraulic Hose	1
29	78-416	Hydraulic 3 Bank Valve	1
30	72-062	Hydraulic Hose	1
31*	72-021	Hydraulic Pump (Double Pump)	1
	72-021-01	Seal Kit	1
32	72-066	Hydraulic Hose	1

* **No other parts are replaceable for hydraulic motor or pump.**

HYDRAULIC PRESSURES	FRONT	REAR
Pump Displacement	.90 in ³ /rev	.40 in ³ /rev
Pump Input Speed (up to)	4000 rpm	4000 rpm
Max. Operating Pressure	3600 psi	3600 psi
Max. Inlet Vacuum	10 in. Hg	10 in. Hg
Max. Case Pressure	800 psi	800 psi

PARTS MANUAL IS AVAILABLE ONLINE AT www.smithco.com



EC Declaration of Incorporation

In accordance with EN ISO 17050-1:2004

We

Smithco Inc.
34 West Avenue
Wayne, PA USA
19087-3311

In accordance with the following Directive:

2006/42/EC

The Machinery Directive

hereby declare that for the partly completed machinery identified as :

Equipment	Sweep Star Big Vac V72
Model number	72-000
Serial Number	72233

the following EHSRs have been complied with:

BS EN ISO 12100-1:2003	Safety of Machinery Part 1
BS EN ISO 12100-2:2003	Safety of Machinery Part 2
BS EN ISO 13857	Safety of Machinery upper and lower limbs
BS EN 349: 1993+A1:2008	Safety of Machinery Crushing hazards

and the technical documentation is compiled in accordance with Annex VII(B) of the Directive.

We undertake to transmit, in response to a reasoned request by the appropriate national authorities, relevant information on the partly completed machinery identified above. The method of transmission shall be electronically

The machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Signed by:



Dawn Bryngelson
Technical Documentation Advisor
Smithco West Inc.
200 West Poplar Avenue
Cameron, WI 54822 USA
24-Feb -10

The technical documentation for the machinery is available from:



Tim Lansdell
Technical Director
19th March 2009
Ransomes Jacobsen Limited
West Road, Ransomes Europark, Ipswich,
England, IP3 9TT

The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2007 or newer Smithco Commercial Product ("Product") purchased after January 1, 2007, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Smithco will repair the Product at no cost to you including diagnosis, labor (at the Smithco standard labor rate, subject to the Smithco flat rate schedule), and parts.

Warranty Duration is:

- (1) Two years, 1500 operational hours* from the date of delivery to the original purchaser or three years from the date of original manufacturer of the product, whichever occurs first. (*Products equipped with hour meter).
- (2) Products used in rental situations are covered for 90 days from date of delivery to original user/ renter.

Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim. **You are particularly responsible to train all present and future operators of this product on the safe operation of this product at your location.**

Instructions for Obtaining Warranty Service:

You are responsible for notifying the Authorized Smithco Products Distributor from whom you purchased the Product as soon as you believe a warrantable condition exists and not later than 30 days from discovery of the condition.

If you need help locating an Authorized Smithco Distributor, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Smithco Product Support Department
200 W Poplar PO Box 487
Cameron, Wisconsin 54822

Telephone: 1-800-891-9435 E-Mail: ProductSupport@smithco.com

Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

Items/Conditions Not Covered:



Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. The items/conditions listed below are not covered by this warranty:



Product failures which result from the use of non-Smithco replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.



Product failures which result from failure to perform required maintenance and/or adjustments are not covered.



Product failures that result from operating the Product in an abusive, negligent or reckless manner are not covered.



This warranty does not apply to parts subject to consumption through use, unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to: blades, tines, teeth, scarifiers, rakes, plates, wear plates, castor wheels, tires, batteries, filters, belts, nozzles, etc.



This warranty does not apply to failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.



This warranty does not apply to normal “wear and tear” items. Normal “Wear and Tear” includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.



Smithco may require the return of failed parts or components in order to determine the validity of any warranty claim.



Smithco will not be obligated to replace components of other manufacturers if inspection by the original component manufacturer indicates that failure was due to normal wear and tear, expected consumption through use or improper care or service.

Other Legal Disclaimers:

The above remedy for product defects through repair or replacement by an authorized Smithco distributor or dealer is the purchaser’s sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

THERE ARE NO OTHER EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTIES CONTAINED HEREIN.

Some states may not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

THE SMITHCO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT, INCLUDING ANY COST OR EXPENSE OF PROVIDING A SUBSTITUTE PRODUCT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states may not allow the exclusion of indirect, incidental or consequential damages, so the above exclusion may not apply to you.

Smithco neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of this product.

SMITHCO, INC.

Wayne, PA 19087

