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# Trav-L-Vac 300 User's Manual



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## Chapter 1

# About the Trav-L-Vac

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### PURPOSE OF THIS MANUAL

This manual explains how to operate and maintain the Trav-L-Vac 300. It includes instructions for set-up, operation, and maintenance. It also contains parts lists, diagrams, and service information to help you order replacement parts and perform user-serviceable repairs.

Before operating the Trav-L-Vac (TLV), you should read through this manual and become familiar with all instructions.

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### HOW TO USE THE MANUAL

This manual is organized to help you quickly find the information you need. Each chapter describes a specific topic on using or maintaining your equipment.

Each page is designed with two columns. This large column on the inside of the page contains instructions and illustrations. Use these instructions to operate and maintain the equipment.

The narrower column on the outside contains additional information such as warnings, special notes, and definitions. Refer to it for safety notes and other information.

### In This Chapter

PURPOSE OF THIS MANUAL  
HOW TO USE THE MANUAL  
SYMBOLS AND WARNINGS  
EQUIPMENT DESCRIPTION

Throughout this manual, refer to this column for warnings, cautions, and notices with supplementary information.

## SYMBOLS AND WARNINGS

The following symbols are used throughout this manual to indicate special notes and warnings. They appear in the outside column of the page, next to the section they refer to. Make sure you understand what each symbol means, and follow all instructions for cautions and warnings.



### WARNING

A WARNING alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **serious injury or death**.



### CAUTION

A CAUTION alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **minor or moderate injury**.



### CAUTION

A CAUTION alert with the damage alert symbol indicates a situation that **will** result in **damage to the equipment**.



### IMPORTANT

An IMPORTANT alert with the damage alert symbol indicates a situation that **may** result in **damage to the equipment**.



This is the **safety alert symbol**. It is used to alert you to **potential personal injury hazards**. Obey all safety messages that follow this symbol to avoid possible injury or death.



This is the **equipment damage alert symbol**. It is used to alert you to **potential equipment damage situations**. Obey all messages that follow this symbol to avoid damaging the equipment or workpiece on which it is operating.

**NOTE**

This symbol indicates a user note. **Notes** provide additional information to supplement the instructions, or tips for easier operation.

**NOTE**

A NOTE provides supplementary information or operating tips.

---

**EQUIPMENT DESCRIPTION**

Wachs Trav-L-Vac (TLV) Transportable Vacuum Systems are designed for a wide variety of field applications, including curb box, valve box, catch basin and vault clean out; cleanup of sludge and industrial spills; and key hole excavation for curb box installation or replacement. Trav-L-Vac systems are completely self contained, built on a structural steel base with the following components:

- engine
- holding tank
- blower
- filtration system
- suction tube.

The Trav-L-Vac 300, the smallest model of the Trav-L-Vac line, features strong lifting capability and the largest capacity holding tank in its class. It handles solid and liquid debris safely and quickly. The system is available in skid mount configuration for operation from pickup truck beds, or as a compact trailer system for towing to jobsites.

**Standard Features**

- Fabricated base of channeled steel and steel plate with fork lift slots.
- Large capacity holding tank with manually activated dump gate and 2" (51 mm) drain plug.
- 3-stage filtration system.
- Heavy-duty positive displacement blower with silencer.
- Vacuum relief valve.
- Gasoline drive.
- 2-1/2" (64 mm) diameter x 10' (3.0 m) flexible wire reinforced rubber suction hose.
- 2" (51 mm) diameter x 6-1/2' (2.0 m) steel suction tube with handles.

- Quick disconnect cam lock couplings.
- High liquid level shut off switch.
- Hour meter & tachometer.

### **Optional Features**

- Trailer package.
- Light package.
- Suction tubes.
- Custom colors.

### **Specifications**

#### **Power Source**

- 20 HP gasoline engine.

The Trav-L-Vac 300 uses a Kohler 20 HP twin cylinder, air cooled gasoline engine. Controls include electric key start and speed control. The engine has been factory pre-tested.

#### **Blower**

- Belt drive positive displacement rotary lobe impeller type with 14"(356 mm) Hg maximum capacity.
- 345 CFM (9.77 cmm) @ 3600 RPM with 14" (356 mm) Hg.
- 15,813 FPM (4,819.8 cmm) air velocity through 2" (51 mm) diameter inlet

The Roots Universal 45 RAI series blower has been properly lubricated at the factory. Enclosed with the Trav-L-Vac manual is the Roots Blower manual; refer to it for specifications, maintenance, and repair information.

#### **Filtration**

- Primary drum filter with 2" (51 mm) of polyethylene foam.
- Secondary filter of fine polyethylene foam.
- Final filter, 10 micron polyester cartridge.
- All filters are washable with water.

A three-stage system, accessed from top of holding tank, using toggle clamp to lock filters in place. Easy clean with mild soap and water.

### **Holding Tank**

- 12 ft<sup>3</sup> (0.34 m<sup>3</sup>)/90 liquid gal. (33.7 l) actual holding capacity.
- 32" (813 mm) diameter.
- Equipped with vacuum relief valve, high level liquid shut off switch, and hinged dump gate.
- 2" (51 mm) drain plug.

### **Finish**

Durable painted finish w/plated fasteners throughout.

### **Dimensions and Weight**

(LxWxH): 40"x 60"x 55"(1,016 x 1,524 x 1,397 mm)

950 lb (430.9 kg)

### **Battery**

For shipping purposes, the battery is left empty. Battery acid is shipped separately, allowing for the customer to fill the battery upon delivery.

### **Gas Tank**

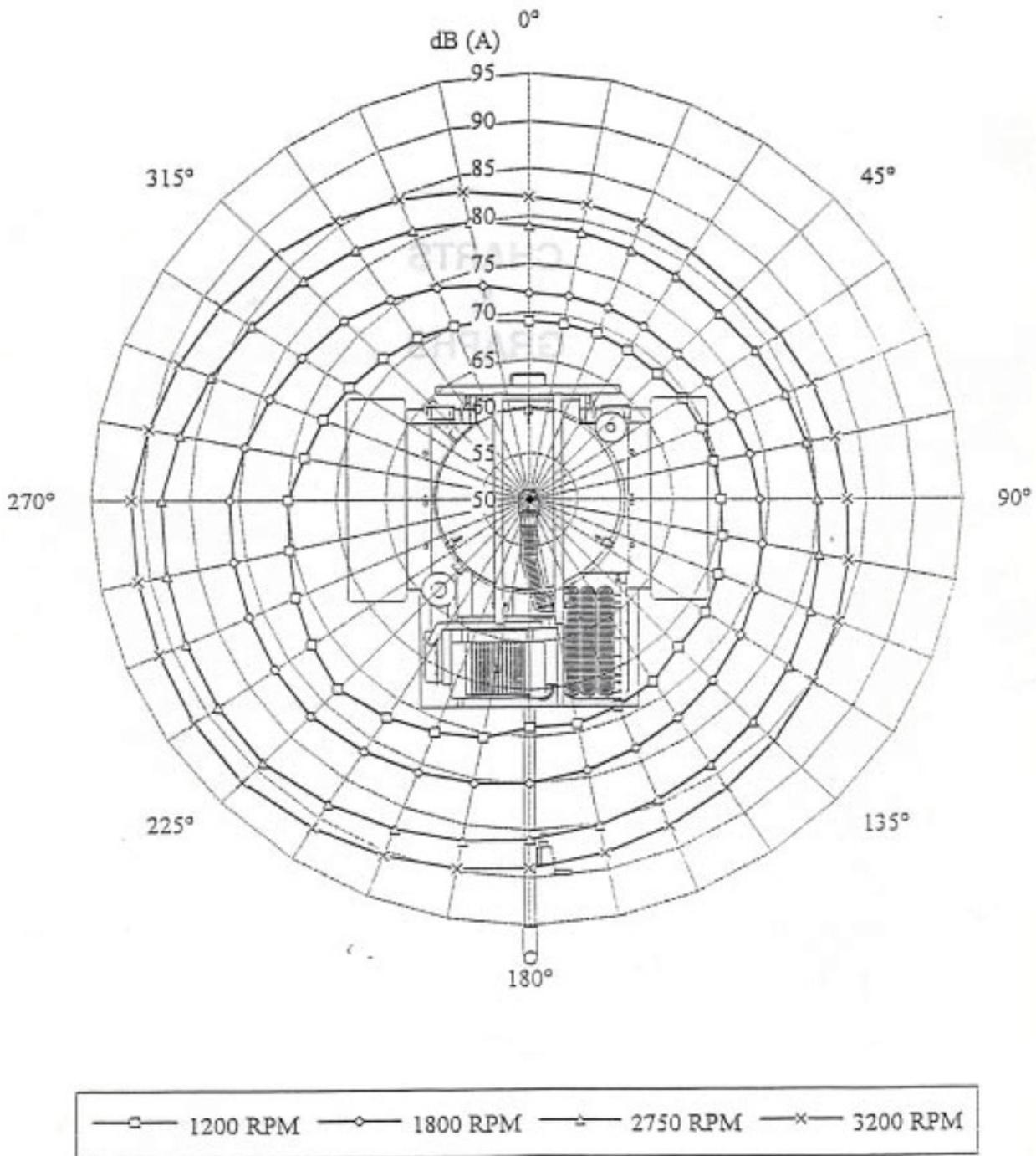
Use only regular grade unleaded gasoline with an octane rating of 87 or higher.

- 6 gallon capacity
- Always keep gas cap vent in the full open position.

### **Trailer Bolt-On Kit (Optional)**

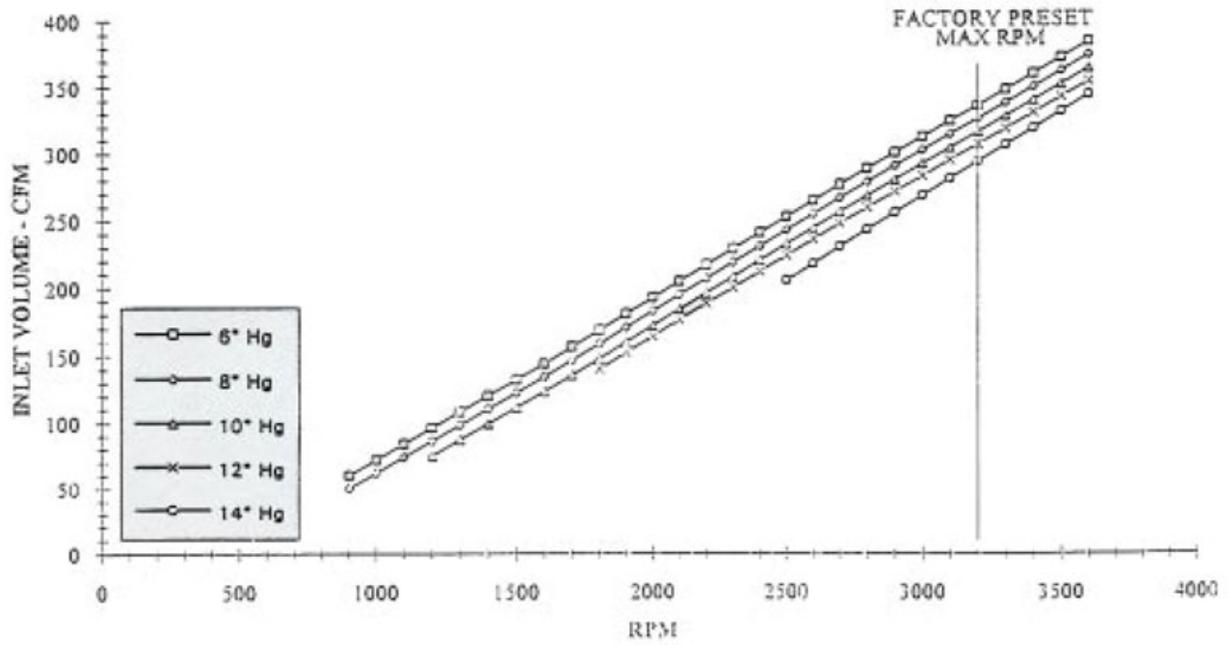
- 2,300 lb trailer capacity.
- Torsion axle.
- 2" ball coupler or pintle.
- 105" overall length.
- 63" overall width.

### Acoustic Evaluation Sound Decibel Level @ 10 ft

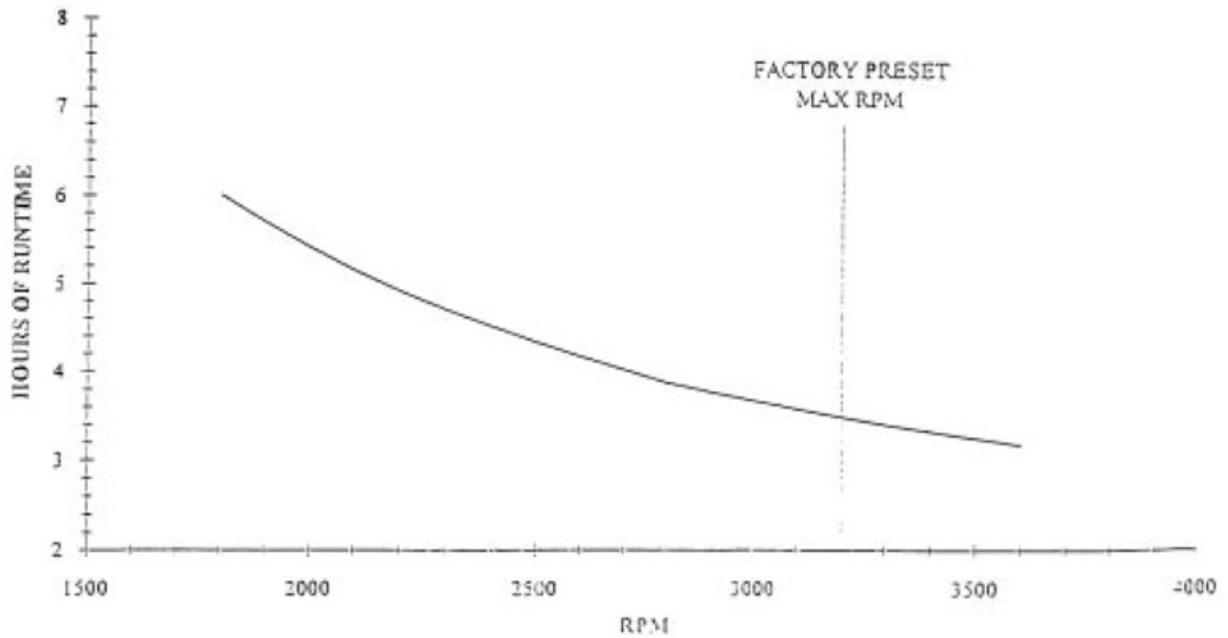


**Performance Charts**

TLV 300 VACUUM PERFORMANCE



TLV 300 FUEL CONSUMPTION





## Chapter 2

# Safety

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E.H. Wachs takes great pride in designing and manufacturing safe, high-quality products. We make user safety a top priority in the design of all our products.

Read this chapter carefully before operating the equipment. It contains important safety instructions and recommendations.

---

### OPERATOR SAFETY

Follow these guidelines for safe operation of the equipment.

- **READ THE OPERATING MANUAL.** Make sure you understand all setup and operating instructions before you begin.
- **INSPECT MACHINE AND ACCESSORIES.** Before starting the machine, look for loose bolts or nuts, leaking lubricant, rusted components, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decrease the chances for injury.
- **ALWAYS READ PLACARDS AND LABELS.** Make sure all placards, labels, and stickers are clearly legible and in good condition. You can purchase replacement labels from E.H. Wachs Company.
- **KEEP CLEAR OF MOVING PARTS.** Keep hands, arms, and fingers clear of all rotating or moving parts.



Look for this symbol throughout the manual. It indicates a personal injury hazard.

Always turn machine off before doing any adjustments or service.

- **SECURE LOOSE CLOTHING AND JEWELRY.** Secure or remove loose-fitting clothing and jewelry, and securely bind long hair, to prevent them from getting caught in moving parts of the machine.
- **KEEP WORK AREA CLEAR.** Keep all clutter and nonessential materials out of the work area. Only people directly involved with the work being performed should have access to the area.
- **KEEP CLEAR OF VACUUM HOSE WHEN OPERATING VACUUM.** Keep hands, arms and fingers clear of vacuum inlet. Always turn machine off before making any adjustments or changing wands.
- Take care in transporting vacuum system. Always check trailer hitch, install safety chains, and check brake lights and turn signals.
- Do not run engine in enclosed area. Exhaust fumes are deadly.
- Do not smoke when filling fuel tank or operating vacuum system.
- Do not allow grass, leaves, dirt, rags, or combustible materials to accumulate around engine and muffler.
- Use this tool for the intended purpose only.
- Do not fill or empty vacuum tank without trailer connected to towing vehicle (trailer configuration), or frame bolted to trailer bed (skid mount configuration).
- Shut system down before performing any service to the equipment.
- Use all appropriate and required personal protective equipment, such as safety shoes, hard hat, safety glasses, hearing protection, etc.

### **Safety Symbols**



This icon is displayed with any safety alert that indicates a personal injury hazard.

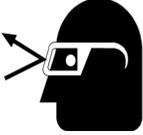
### **WARNING**

This safety alert indicates a potentially hazardous situation that, if not avoided, **could** result in **death or serious injury**.

## CAUTION

This safety alert, with the personal injury hazard symbol, indicates a potentially hazardous situation that, if not avoided, **could** result in **minor or moderate injury**.

### Protective Equipment Requirements

	<p style="text-align: center;"><b>WARNING</b></p> <p>Always wear impact resistant eye protection while operating or working near this equipment.</p>
---	--

For additional information on eye and face protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.133., Eye and Face Protection and American National Standards Institute, ANSI Z87.1, Occupational and Educational Eye and Face Protection. Z87.1 is available from the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

	<p style="text-align: center;"><b>CAUTION</b></p> <p>Personal hearing protection is recommended when operating or working near this tool.</p>
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Hearing protectors are required in high noise areas, 85 dBA or greater. The operation of other tools and equipment in the area, reflective surfaces, process noises, and resonant structures can increase the noise level in the area. For additional information on hearing protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.95, Occupational Noise Exposure and ANSI S12.6 Hearing Protectors.



## Chapter 3

# Operating Instructions

### In This Chapter

ASSEMBLING THE TRAILER PACKAGE

OPERATING PROCEDURE

### ASSEMBLING THE TRAILER PACKAGE

The reference numbers (“ref”) in the following procedure refer to the callouts in the installation diagram in Figure 3-1.

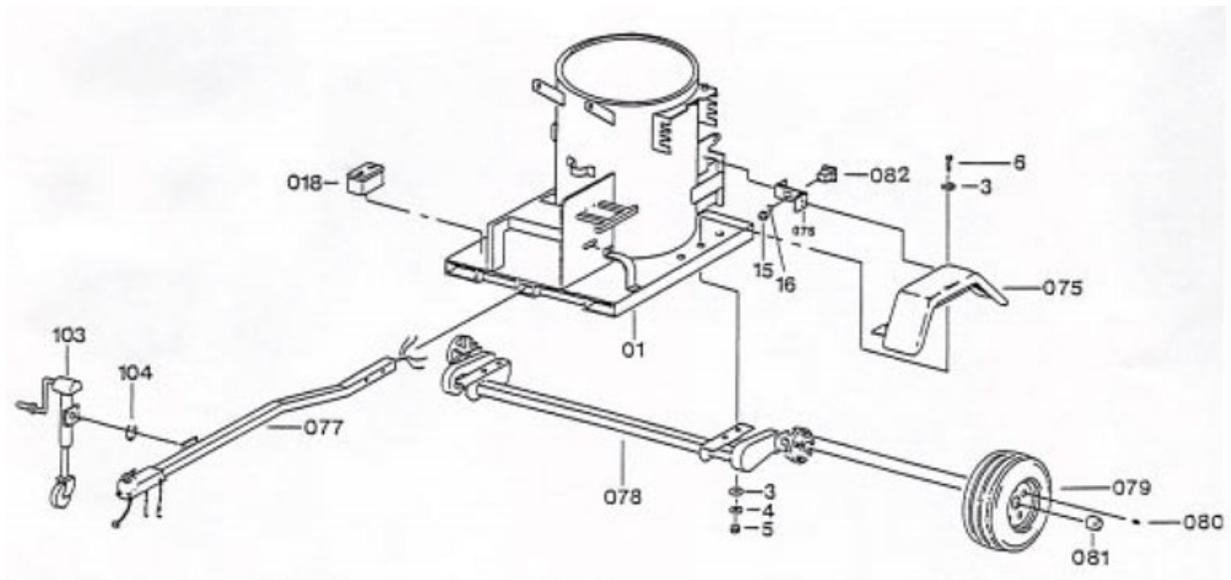


Figure 3-1. Refer to the reference numbers in the installation diagram for the following steps.

1. Bolt the fender braces (ref. 076) to the dump gate sides, using the following hardware:

- 3/8-16 x 3/4 HHCS
- 3/8 lock washers
- 3/8-16 hex nuts.

**2.** Align the holes in the fender with the holes in the TLV frame (ref. 01). Secure the fenders (ref. 075) to the fender braces, using the following hardware:

- 3/8-16 x 3/4 HHCS
- 3/8 lock washers
- 3/8-16 hex nuts.

**3.** Position the axle (ref. 078) under the frame with the torsion arms trailing toward the dump gate. The axle is bolted to the frame through the holes closest to the tongue side of the frame.

**4.** Join the fenders to the axle, through the frame, using the following hardware:

- 1/2-13 x 4-1/2 HHCS (ref. 6)
- 1/2 flat washers (ref. 3)
- 1/2 lock washers (ref. 4)
- 1/2-13 hex nuts (ref. 5).

NOTE: Make sure the axle is mounted perpendicular to the direction of travel. A misaligned axle will cause the trailer to tow badly and will decrease tire life.

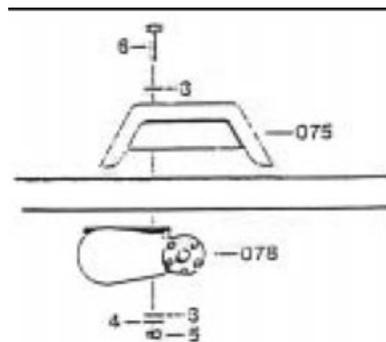
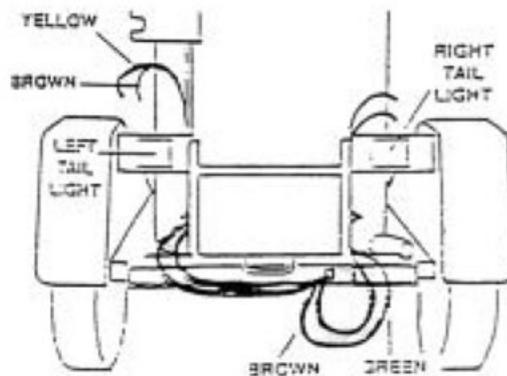


Figure 3-2. Assemble the fenders, frame, and axle as shown.

**5.** Place the center caps (ref. 081) in the rim and mount the wheels (ref. 079) on the axle, using the lug nuts (ref. 080).

**6.** Pull the wire harness (ref. 084) wires through the hole at the back of the tongue receiver. Do not remove the protective loom from the wires.

- 7.** Insert the tongue (ref. 077) into the receivers. Be sure to pull the excess wire with the tongue to avoid damage.
- 8.** Line up the holes in the tongue with the holes in the receiver. Secure the tongue in place, using the supplied pull pins (ref. 090) and keeper pins.
- 9.** Attach the jack (ref. 103) to the tongue, using the supplied snap ring (ref. 104).
- 10.** Pull the trailer wires through the holes under the TLV frame until they come out the back corner, beneath the drain plug.
- 11.** Secure the wiring to the frame, using the supplied adhesive wire clips (ref. 106).
- 12.** Pull the green and brown wires (for the **RIGHT** tail light) up through the conduit directly above the exit hole.
- 13.** The yellow and brown wires (for the **LEFT** tail light) are strung along the TLV frame below the dump gate.



*Figure 3-3. Wire the tail lights as illustrated.*

- 14.** Secure the wires to the pre-drilled holes in the frame, using wire clamps and #10 self drilling hex head screws.
- 15.** Pull the yellow and brown wires up through the conduit and out through the hole near the fender brace.
- 16.** Remove the slack from the trailer wires and secure them to the fender braces, using the supplied adhesive wire clips.

- 17.** Cut the trailer wires, allowing sufficient length to connect the tail lights (ref. 082 & 083).
- 18.** Strip the ends of the trailer wires 1/2".
- 19.** Feed the trailer wires through the upper slots on the fender braces.
- 20.** Push the stripped brown ends into the hole on the trailer lights marked **TAIL**.
- 21.** Push the stripped green and yellow ends into the hole on the trailer lights marked **STOP**.
- 22.** Bolt the trailer lights to the fender braces, using 1/4-20 hex nuts and 1/4 lock washers.
- 23.** Check that the lights are working properly.
- 24.** Attach your license plate through the holes on the LEFT fender brace. Apply the amber side markers on each side of the TLV 300 frame.

---

## **OPERATING PROCEDURE**

### **Pre-Operation Checklist**

- 1.** Make sure all scheduled maintenance has been properly performed. See the maintenance in Chapter 4, or refer to the maintenance decal on the TLV-300.
- 2.** Make sure that the hitch assembly is properly attached to the towing vehicle.
- 3.** Check trailer brake lights and turn signals.
- 4.** Check the TLV-300 engine fuel level.
- 5.** Make sure the battery is charged.
- 6.** Make sure the suction hose and suction tubes are stored on board the TLV-300.
- 7.** Check the drive belt tension. Adjust as necessary. (Refer to the drive belt tensioning diagram in Chapter 4.)

## Set-Up Procedure

1. Position the TLV system near the work area.
2. Connect the suction hose to the coupling on the vacuum inlet port.



*Figure 3-4. Connect the suction hose to the vacuum inlet port.*

3. Connect the other end of the suction hose to the coupling on the suction tube.

## Operation

1. Start the engine and allow it to idle several minutes to properly warm up.



Figure 3-5. Use the key starter to start the engine.

- 2.** Make sure the vacuum diverter valve is closed. If the diverter valve is open, there will be no suction at the wand opening.
- 3.** Bring engine RPM up to full running speed.
- 4.** Lower the suction tube into valve box until it contacts either water or debris. Extract debris until the valve box is empty, or until the TLV-300 holding tank is full.

NOTE: If a clog occurs, shake suction hose. If clog remains, open the vacuum diverter valve to remove vacuum from suction hose. Disconnect the hose from the TLV. Either use a ram to dislodge clogged debris or reverse suction hose ends.



Figure 3-6. Use the suction tube to extract water and debris from the valve box.

5. If the tank fills with liquid to its limit, the high liquid level switch will automatically shut off the engine. You must drain the holding tank before the engine can be restarted.
6. After the vacuum operation is over, run the engine for several minutes to clear out any water that may have reached the blower.
7. Consult the manufacturer for special operating suggestions concerning use in freezing weather.

NOTE: If removing heavier or solid debris, the high liquid level switch may not shut off the unit. Periodically check the holding tank to avoid over filling.

### Dumping Procedure

1. Shut off the engine.
2. Position the TLV-300 over the dumping area.
3. Remove the tank drain plug to allow any liquids in the tank to drain.
4. Once liquid has drained, open the dump gate and remove any solid debris.



Figure 3-7. Open the dump gate to remove solid debris from the tank.

5. Clean the primary filter. You can use plain water, though mild soap mixed with water is recommended if available.



*Figure 3-8. Open the tank lid and clean the filter after each use.*

- 6.** Flush out the suction tubes and suction hose.

### **Operating Tips**

- 1.** While excavating water, make sure to submerge the suction tube completely.
- 2.** If debris is packed in the bottom of the valve box, rotate the suction tube assembly back and forth to break up debris.
- 3.** For solid debris, pour water into the valve box to speed up debris removal.
- 4.** If the suction tube becomes clogged, use a rod that fits inside the tube to remove the blockage.
- 5.** Flush out suction tubes and suction hoses prior to storage.
- 6.** Perform all scheduled maintenance at the designated times to ensure peak performance and increase the operating life of the TLV-300.

## Chapter 4

# Maintenance

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### BLOWER MAINTENANCE SCHEDULE

Refer to the blower maintenance diagram in Figure 4-1 for the following procedures.

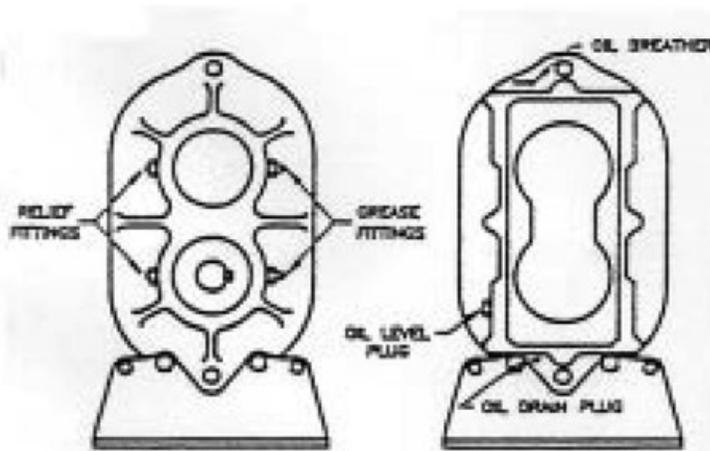


Figure 4-1. The diagram illustrates the blower components.

### Weekly

#### Check Oil Level

1. Stop blower and wait 5 minutes.
2. Remove oil breather and oil level plug.

### In This Chapter

BLOWER MAINTENANCE SCHEDULE

FILTER MAINTENANCE SCHEDULE

ENGINE MAINTENANCE SCHEDULE

GENERAL MAINTENANCE SCHEDULE

ADJUSTING THE BLOWER DRIVE BELTS

- 3.** Add oil until oil runs out level holes.
- 4.** Replace breather and level plugs.

### **Grease Bearings**

Use an NLGI grade 2 EP grease.

- 1.** Using a pressure gun, force grease into housing through grease fittings until clean grease emerges from relief fittings.
- 2.** Wipe all grease off around relief fittings to prevent spraying onto drive belts.

### **Every 1,000 Hours**

#### **Change Oil**

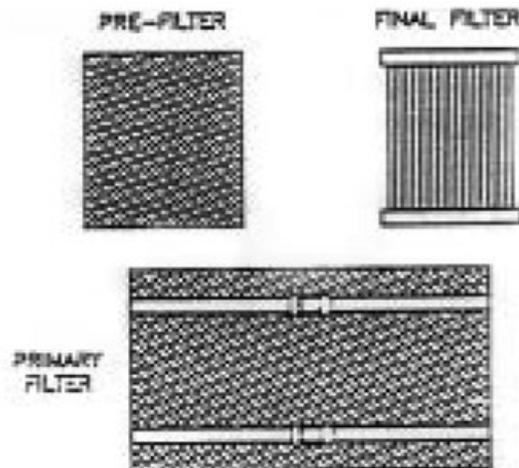
Change oil after initial 100 hours.

Recommended oil: Mobil DTE BB, Amoco 220, Texaco R&O 220, or equivalent.

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## **FILTER MAINTENANCE SCHEDULE**

Refer to the filter maintenance diagram in Figure 4-2 for the following procedures.



*Figure 4-2. The diagram illustrates the filters.*

**Daily**

Clean the primary filter. Filters are washable with mild detergent and water.

**Weekly**

Clean the pre-filter. Filters are washable with mild detergent and water.

Clean the filters more frequently under severe operating conditions. Replace a damaged filter immediately to prevent debris from reaching the blower.

**ENGINE MAINTENANCE SCHEDULE**

NOTE: Change oil after first 5 hours of operation. See Figure 4-3 for oil grade selection.

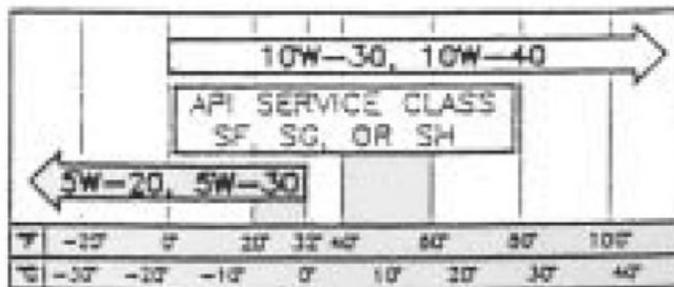


Figure 4-3. Select oil based on the chart.

**Daily**

1. Check oil level.
2. Fill fuel tank (unleaded fuel).
3. Clean air intake screen.
4. Check tightness of air cleaner cover.

**Every 25 Hours**

Service pre-cleaner.

### **Every 100 Hours**

- 1.** Service paper element.
- 2.** Remove shrouds to clean cooling fins and external surfaces.
- 3.** Check battery electrolyte level.
- 4.** Change oil.

### **Every 200 Hours**

- 1.** Check spark plug condition and gap.
- 2.** Change oil filter.

---

## **GENERAL MAINTENANCE SCHEDULE**

### **Daily**

- 1.** Check suction hoses for any abrasions, holes, kinks or damaged connectors. Replace as needed.
- 2.** Verify that all dump gate and filter lid clamps are secured tightly. Adjust if necessary.
- 3.** Clean any debris from dump door seal.
- 4.** Verify that all trailer and/or accessory lights are functioning properly. Repair or replace as needed.

### **Weekly**

- 1.** Clean debris build-up from holding tank.
- 2.** Check lug nuts and fasteners for tightness. Tighten as necessary.

### **Monthly**

- 1.** Check blower drive belts for proper tension, and for frayed or cracked condition. Adjust or replace as needed.

2. Check for loose piping, fittings, and connectors. Tighten as needed.
3. Check tire pressure. Fill as necessary.

---

## ADJUSTING THE BLOWER DRIVE BELTS

1. Loosen the 3/4" hex nut on the tensioning shaft (ref. 012).
2. Rotate the tensioning shaft to the right to tighten the belts, or to the left to loosen the belts.
3. Lock the shaft in place by re-tightening the 3/4" hex nut.

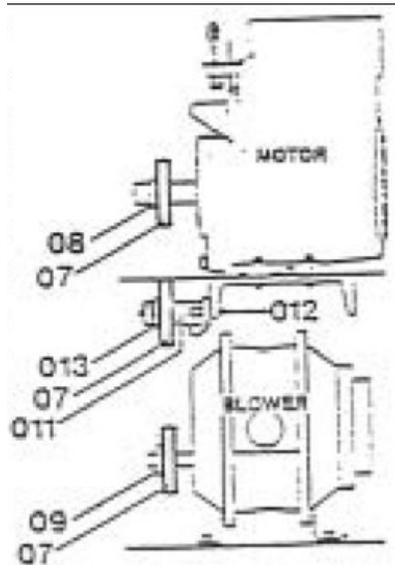


Figure 4-4. Adjust the belt tension by rotating the tensioning shaft (ref. 012).



## Chapter 5

# Parts List and Ordering Information

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### ORDERING INFORMATION

To place an order, request service, or get more detailed information on any E.H. Wachs Water Utility products, call us at one of the following numbers:

U.S.                   866-392-1060  
International: 815-943-4785

You can also visit our Web site at:

[www.ehwachs.com](http://www.ehwachs.com)

### Ordering Replacement Parts

When ordering parts, refer to the parts lists in this chapter. Please provide the part description and part number for all parts you are ordering.

### Repair Information

Please call us for an authorization number before returning any equipment for repair or factory service. We will advise you of shipping and handling. When you send the equipment, please include the following information:

- Your name/company name
- Your address
- Your phone number

### In This Chapter

ORDERING INFORMATION  
DRAWINGS AND PARTS LISTS

- A description of the problem or the work to be done.

Before we perform any repair, we will estimate the work and inform you of the cost and the time to complete it.

### **Warranty Information**

Enclosed with the manual is a warranty card. Please fill out the registration card and return to E.H. Wachs. Retain the owner's registration record and warranty card for your information.

### **Return Goods Address**

Return equipment for repair to the following address.

E.H. Wachs  
Water Utility Products  
455 Comanche Circle  
Harvard, Illinois 60033 USA

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### **DRAWINGS AND PARTS LISTS**

Use the drawings and parts lists on the following pages to identify and order spare or replacement parts.

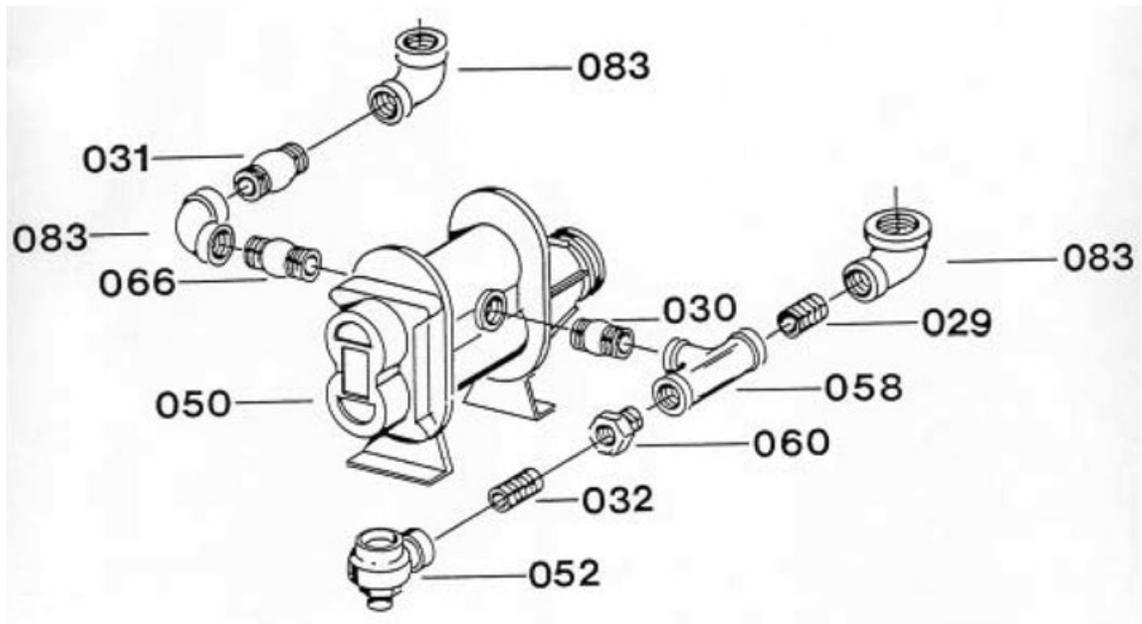


**TRAV-L-VAC 300 GASOLINE BILL OF MATERIAL  
PART NO. 59-000-01 & 59-401-01 ( CONT. )**

REF.	PART NO.	QTY.	DESCRIPTION
*8	90-071-07	8	3/8-16 x 3/4" HHCS
*9	90-075-53	12	3/8" FLAT WASHERS
*10	90-075-55	12	3/8" LOCK WASHERS
*11	90-075-01	14	3/8-16 HEX NUTS
12	90-075-05	4	3/8-16 LOCK NUTS
13	90-051-10	1	1/4-20 x 1" HHCS
14	90-051-07	2	1/4-20 x 3/4" HHCS
15	90-055-01	7	1/4-20 HEX NUT
16	90-055-52	7	1/4 LOCK WASHERS
17	90-055-53	6	1/4" FLAT WASHERS
21	90-065-52	4	5/16" FLAT WASHERS
22	90-065-51	7	5/16-18 LOCK WASHERS
23	90-065-01	5	5/16-18 HEX NUTS
*24	90-065-06	2	5/16-18 WING NUT
*25	90-051-06	2	HHCS, 1/4-20 x 5/8
*26	90-075-51	1	3/8" SHK PRF LOCKWASHER
*27	90-040-05	2	10-24 x 1/2" SHCS
*28	90-055-54	2	1/4" AN WASHER
*29	90-061-08	2	HHCS, 5/16-18 x 7/8"
*30	90-059-02	1	1/4-20 x 3/8" RHMS
*31	90-501-33	4	3/8" TERMINAL
* = NOT SHOWN			



Blower Assembly, 59-302-01



REF.	PART NO.	QTY.	DESCRIPTION
029	59-029-00	1	NIPPLE, 2-1/2" x 4-1/2"
030	59-030-00	1	NIPPLE, 2-1/2" x 3-1/2"
031	59-031-00	1	NIPPLE, 2-1/2" x 7"
032	59-032-00	1	NIPPLE, 2" x CLOSE
050	62-050-00	1	BLOWER, AIR
*051	62-051-00	1	SILENCER, AIR
052	62-052-00	1	VALVE, KNUCKLE
058	62-058-00	1	TEE, 2-1/2"
060	62-060-00	1	FLANGE BUSHING, HEX
066	62-066-00	1	NIPPLE PIPE 2-1/2" x 4"
083	62-083-00	3	ELBOW, 90° x 2-1/2"

\* = NOT SHOWN