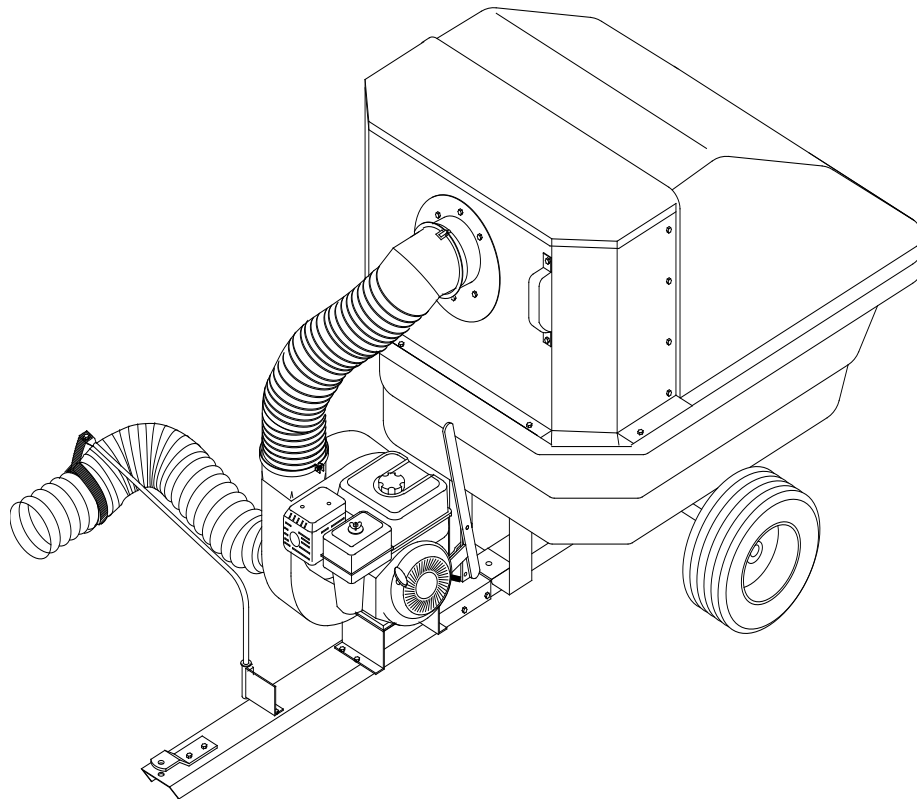


TRAIL VAC

MODEL 520C



Operating and Assembly Manual

**Palmer Products Inc.
5225 Serum Plant Road
Thorntown, IN 46071**

SAFETY RULES

Remember, any power equipment can cause injury if operated improperly or if the user does not understand how to operate the equipment. Exercise caution at all times when using power equipment.



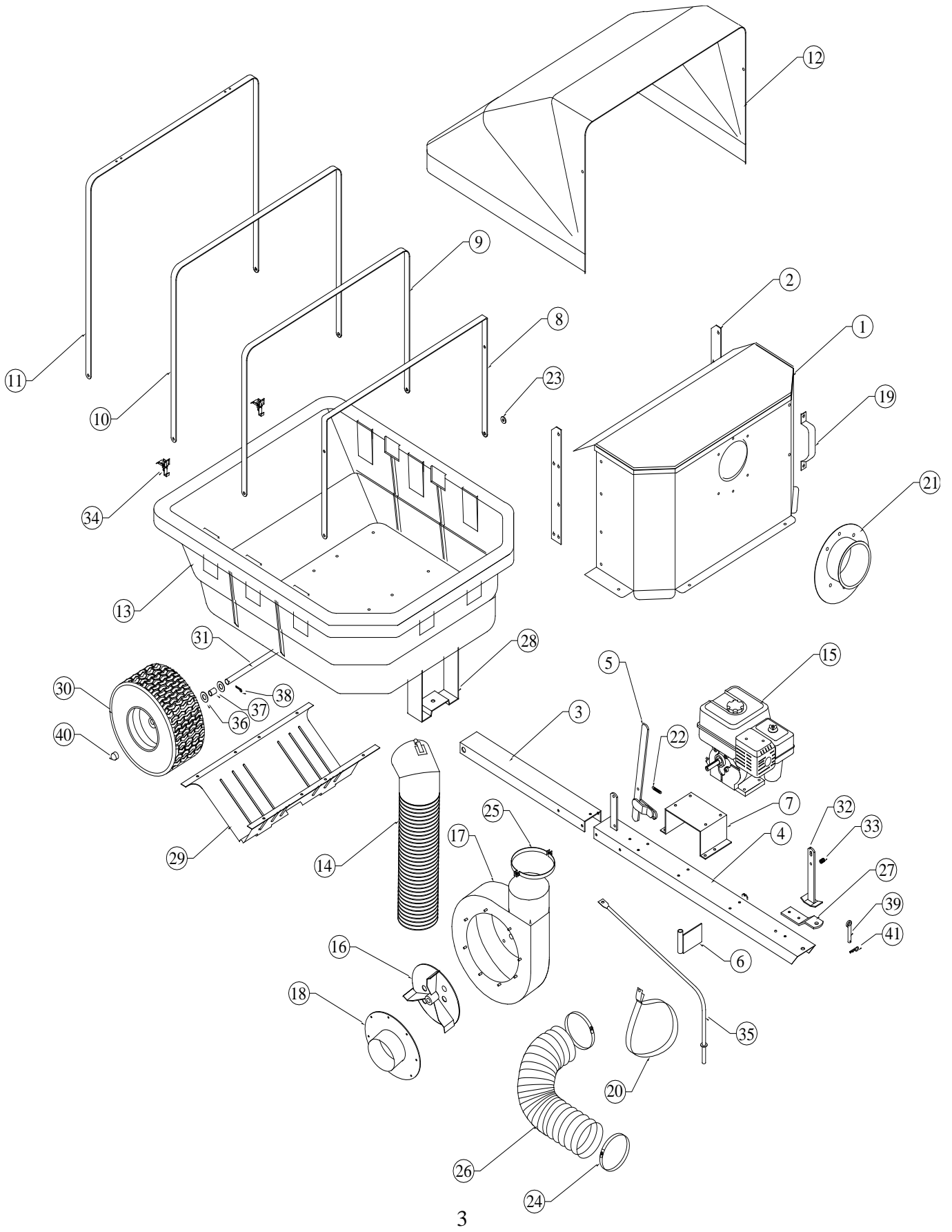
This symbol means Attention!!!! It is used to point out safety precautions.

- Read and follow all instructions in this manual before assembly or operation of this equipment. Failure to comply with these instructions may result in personal injury. Keep this manual for future reference and for ordering replacement parts.
- Read this instruction manual carefully. Become familiar with the controls and proper use of this equipment.
- Read the engine owners manual and safe operation rules before using this equipment.
- Never allow children less than 16 years of age to operate the Trail-Vac. Children 16 years and older should operate **only** under close parental supervision.
- Do not allow anyone to operate this equipment without proper instruction.
- Do not allow passengers to ride on the Trail-Vac or on the towing vehicle.
- Keep children and pets out of area of operation.
- Check fuel before starting engine. **Do Not** fill fuel tank indoors, or while engine is running or hot. Wipe off any spilled fuel before starting engine.
- Engine and muffler get **HOT! Do Not** touch! Keep debris from accumulating on or around engine and muffler to avoid fire hazard.
- Allow engine to cool before storing in any enclosed area. Never store Trail-Vac with fuel in tank.
- Do not operate engine if air cleaner or cover is removed, except for adjustments. Removal of the part could create a fire hazard.
- Keep hands, feet, face, long hair and clothing out of inlet and discharge areas. There are **ROTATING BLADES** inside these openings.
- Make certain that all moving parts come to a complete stop before cleaning, repairing or inspection. Disconnect spark plug wire and keep away from plug to prevent accidental starting.
- If Trail-Vac should become clogged with debris, **SHUT OFF ALL ENGINES** and wait until impeller comes to a complete stop before attempting to remove obstruction. Disconnect spark plug wire to prevent accidental starting.
- If excessive vibration occurs while operating your Trail-Vac, stop the engine immediately, disconnect the spark plug wire and allow all moving parts to stop completely before taking the following steps.
 - A. Inspect for damage.
 - B. Repair or replace any damaged parts.
 - C. Check for loose parts and tighten to assure continued safe operation.
- Check all hardware periodically to insure safe operation.
- Check cart cover periodically for wear and replace if worn or damaged.
- **Never** operate Trail-Vac without intake hose and exhaust hose attached in proper place.
- **Do Not** remove exhaust hose or attempt to empty contents of cart while engine is running.
- Keep all shields and guards in place and securely attached.
- Always wear eye protection (safety glasses or goggles) when operating this equipment.
- **Do Not** stand behind cart in exhaust discharge area while engine is running.
- **Do Not** operate this equipment while intoxicated or while taking medications that could impair reactions or senses.
- Operate this equipment at reduced ground speed on rough terrain, along creeks and ditches and on slopes to prevent tipping or loss of control.
- Vehicle stability and braking are affected by the addition of this unit. Do not fill the Trail-Vac to its full capacity without checking the capability of the towing vehicle to safely pull and stop with the unit attached.
- **Do Not** operate on slopes in excess of 10 degrees. **STAY OFF OF STEEP SLOPES!**
- Follow the maintenance instructions outlined in this manual.

MODEL 520C TRAIL VAC

<u>KEY</u>	<u>PART#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	52010	Front Panel Assembly	1
2	52012	Front Support	1
3	52013	Tongue, Rear	1
4	52014	Tongue, Front	1
5	52015	Cart Latch	1
6	52016	Support Arm Bracket	1
7	52017	Engine Mount	1
8	52018	Bow, Front Assembly	1
9	52019	Bow, Center Front Assembly	1
10	52020	Bow, Center Rear Assembly	1
11	52021	Bow, Rear Assembly	1
12	52022	Cart Cover, Fabric	1
13	52023	Cart Body	1
14	52024	Metal Exhaust Hose	1
15	52025	Engine, 208CC	1
16	52027	Turbine, 3 Blade	1
17	56030	Turbine Housing	1
18	56050	Inlet, 6" Straight	1
19	28104	Handle	1
20	58072	Hose Support Strap	1
21	56070	Cart Connector	1
22	58062	Latch Spring	1
23	56115	Nylon Spacer	6
24	56102	Band Clamp, 6"	2
25	45101	Metal Hose Clamp	1
26	52029	Hose, 6" X 90"	1
27	52028	Draw Plate	1
28	52030	Riser, Cart	1
29	52031	Axle Mount, Cart	1
30	52032	Wheel/Tire	2
31	52033	Axle	1
32	58071	Side Stand	1
33	32108	Spring	1
34	52034	Latch, Rear Cover	2
35	48047	Hose Support Arm	1
36	7500803	¾" Machine Bushing	4
37	52036	Spacer, Axle	2
38	1251308	Cotter Pin	2
39	58104	Hitch Pin	1
40	58058	Hub Cap	2
41	11101	Hairpin Cotter	1

Trail-Vac Parts Breakdown



Assembly Instructions

Note: You will need to service the engine according to engine manufacturer instructions prior to use.

Caution! Assemble unit on a smooth and level surface.



1. Remove all loose parts and hardware bag from carton. Be sure carton is empty before discarding.
2. Lay out all parts and make sure everything is included before you begin assembly.
3. Secure front support (28) and axle mount (29) to cart w/5/16" x 1 1/2" HHC and 5/16" nuts. **(Fig. 1)**
4. Slide axle (31) through axle mount and tongue (3) **(Fig. 2)**
5. Place machine bushing (36), spacer (37), machine bushing (36) and wheel (30) onto axle. Insert cotter pin (38) in hole of axle (31) to secure. Add hub cap. (40) Repeat for other side.

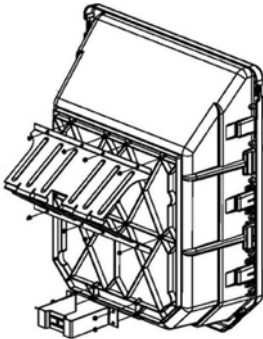


Fig. 1

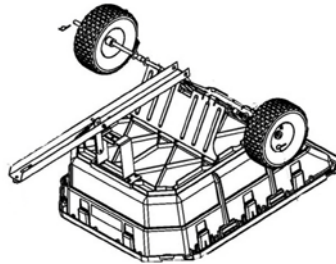


Fig. 2

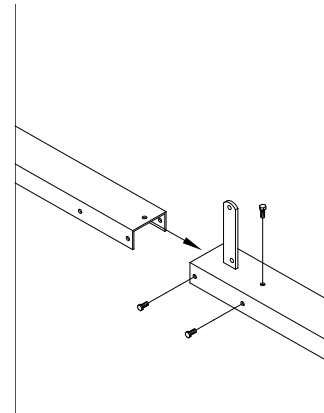


Fig. 3

6. Next, bolt tongue front (4) to tongue rear (3) with 3/8" x 3/4" HHC and whizlock nuts (5 included).
7. Bolt draw plate (27) to tongue front (4) with 3/8" x 3/4" HHC screws and whizlock nuts (2 included) **Fig. 3**
8. Attach Cart Latch (5) to tongue front (4) with 5/16" x 1" HHC, lock nut, and Spring (22). **Fig. 4**
Close tub down to tongue and make sure the latch is secure on the front support (28)
9. Bolt cart connector (21) and handle (19) to front panel assembly (1) with 1/4" x 1/2" truss head screws and whizlock nuts. **Fig. 5**
10. Attach the front panel assembly to the cart tub with 5/16" x 1 1/2" lag screws. (4 ea.) Be careful not to over tighten.
11. Lift the fabric cover up and tighten the bolts (that allow the assembly to pivot up) until the cover will stay forward while dumping the cart.
12. Close the fabric cover assembly and latch to rear of cart.
13. Bolt Engine (15) to Engine Mount Plate (7) as pictured in **Fig. 6** using 5/16 x 1 1/4" HHC & lock nuts provided.
14. Mount Engine Assembly to Tongue front (4) using 5/16" x 3/4" HHC and lock nuts (4ea.) Bolt Support Arm Bracket (6) as pictured. **Fig. 7**
15. Push the metal intake hose (14) onto the turbine housing (17) approximately 2 inches. Secure with metal hose clamp (25) and tighten clamp until hose collapses onto turbine housing. Stretch the metal hose enough to reach the cart connector (21) and clip on. **Fig. 8**
16. Slid Hose Support Arm (35) in to Support Arm Bracket (6).
17. Install chute (tractor specific) on tractor. **Fig. 9**
18. Install the rubber hose (26) to inlet (18) with hose clamps included. **Fig. 10** To fit, turn tractor as far left as possible with unit attached. Attach opposite end to chute (tractor specific) on tractor. Trim if needed. **Fig. 11**
19. Bolt Hose Support Strap (20) to Support Arm (35) with 5/16" x 1" HHC, flat washer and 5/16" whizlock nut. **Note:** Hang strap over side of support, not off end. **Fig.12**

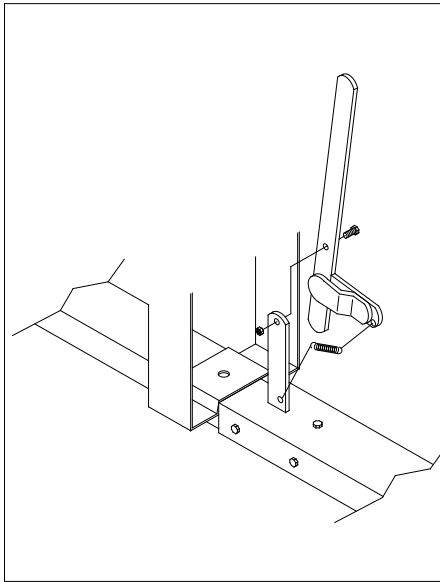


Fig. 4

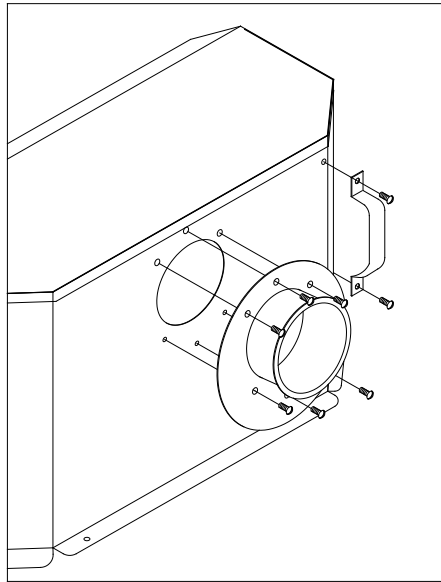


Fig. 5

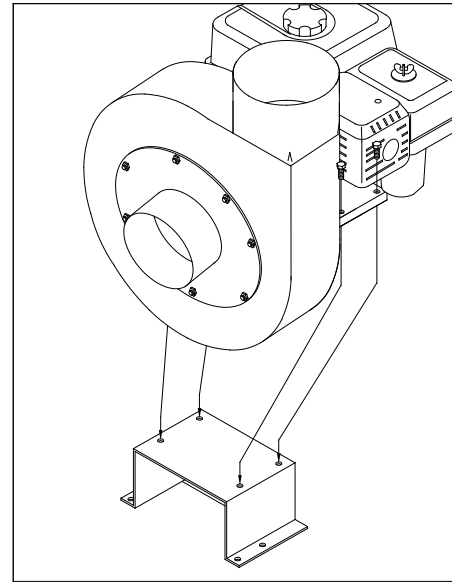


Fig. 6

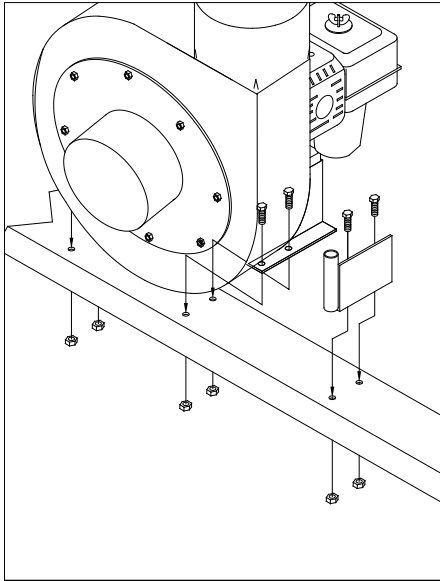


Fig. 7

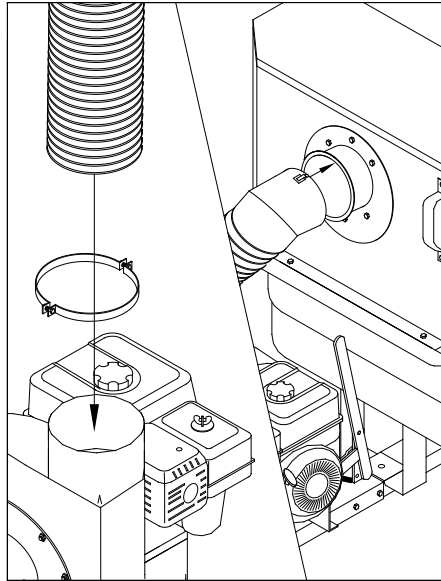


Fig. 8

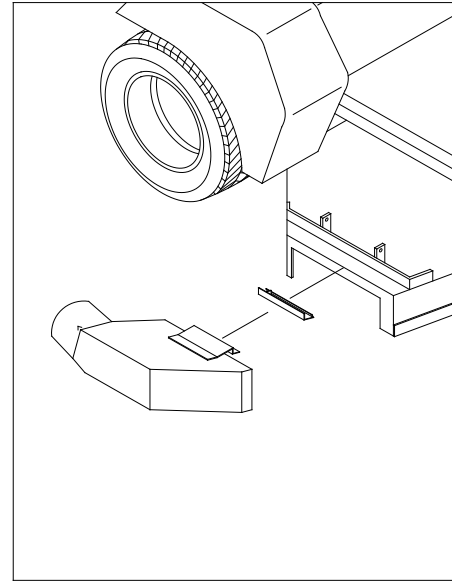


Fig. 9

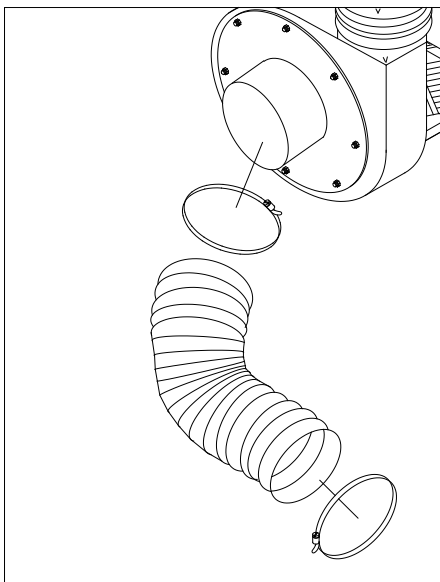


Fig. 10

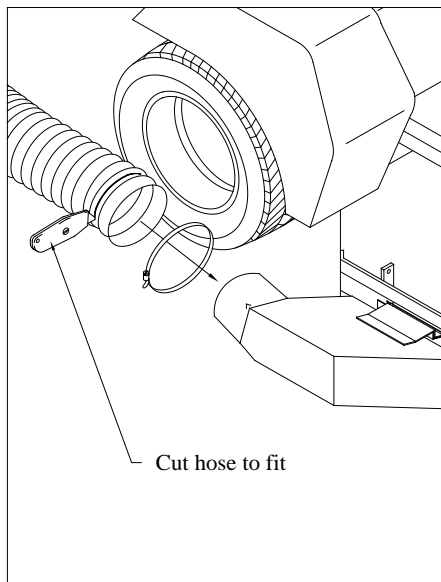


Fig. 11

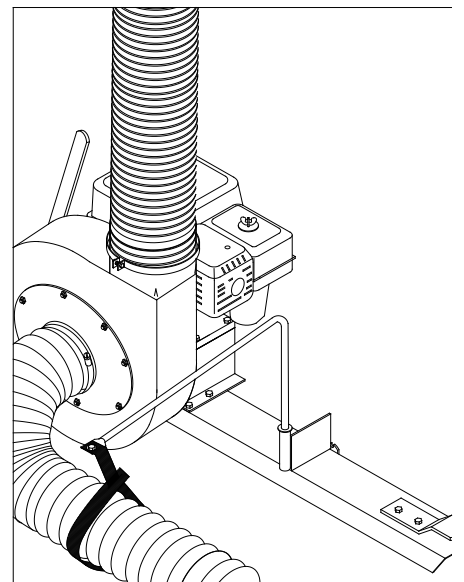


Fig. 12

MAINTENANCE



DANGER: The Trail-Vac was built to be operated according to the rules for safe operation in this manual. Carelessness or error on the part of the operator can result in serious injury. This unit is capable of amputating fingers or hands and throwing objects. Failure to comply with the safety instructions could result in serious injury or death.



MAINTENANCE SCHEDULE	Before each use	After each use	Every season	Before Storage	Service Dates												CAUTION!!!! SPINNING BLADE	
Check engine oil level	X																	
Check tire pressure	X																	
Check all hardware for tightness	X																	
Check cover for wear	X																	
Lubricate			X															
Clean		X		X														
Maintain engine per engine manual																		

BEFORE EACH USE

CHECK FOR LOOSE HARDWARE

- Make a thorough visual check of the unit for any bolts and nuts which may have become loose. Retighten any loose nuts and bolts

CHECK COVER

- Check the cover for damage or wear. Replace if worn or damaged

CHECK TIRE PRESSURE

- Check tire pressure regularly. The recommended tire pressure is printed on the tire.

CHECK ENGINE OIL LEVEL

- Check oil level before each use. Maintain engine oil as instructed in engine manual.

LUBRICATION

- Use a light machine oil to lubricate the axle where the hitch tongue pivots and the latch and pivot bolt at the beginning of each season.
- Grease or oil wheel bearings, using automotive wheel bearing grease at least once every season.



WARNING: Always stop engine and disconnect spark plug wire before lubricating, cleaning or before maintenance or repairs.

ENGINE MAINTENANCE

- Check oil level before each use, maintain engine oil according to the engine manual
- Service air cleaner after every 25 hours of normal conditions. Under extremely dusty conditions, clean every few hours. Poor engine performance usually indicates that the air cleaner needs to be serviced.
- Clean spark plug and reset gap once every season. It is recommended that the spark plug be replaced at the start of each season. Check the engine manual for the correct spark plug and gap specifications.

CLEANING

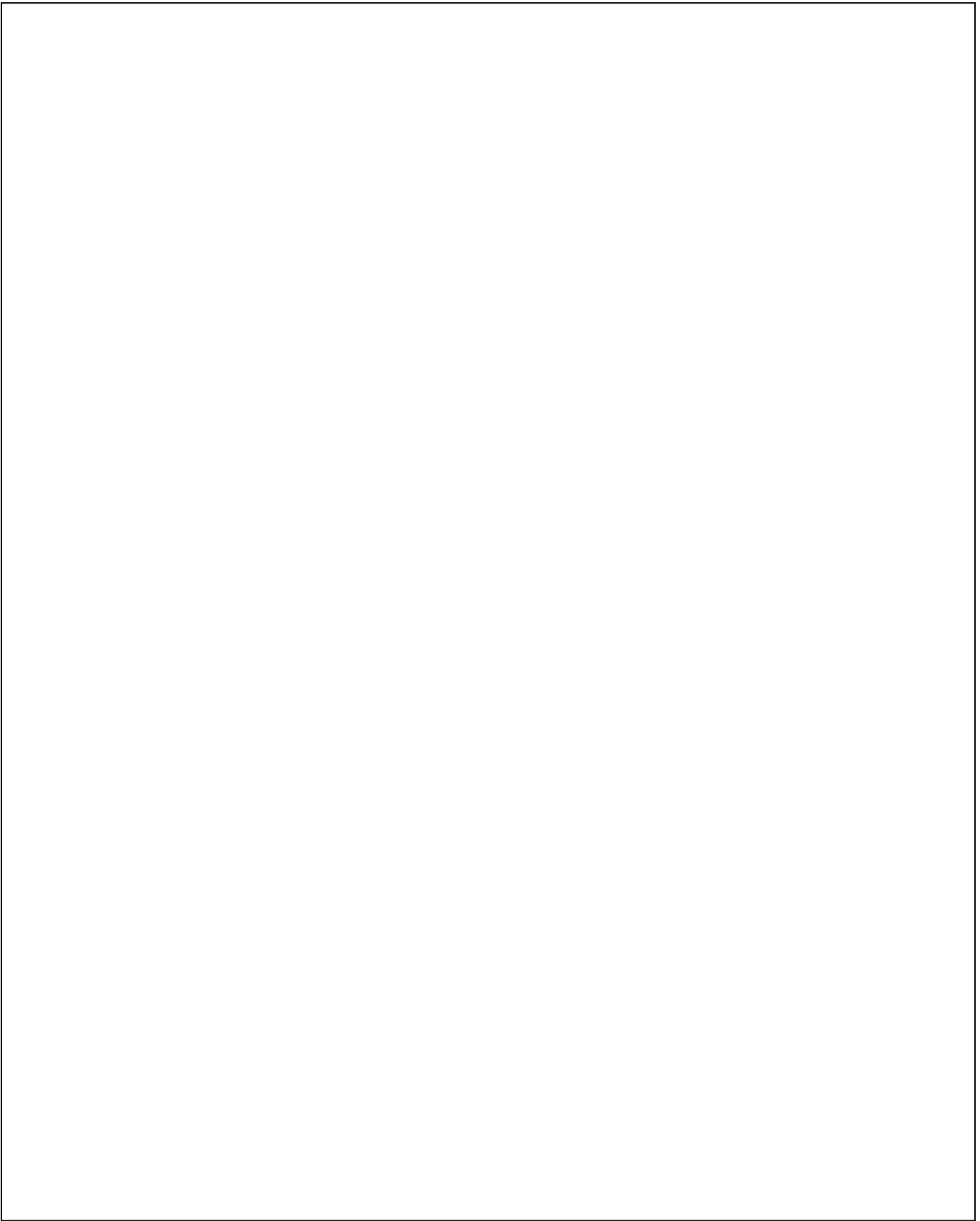
- Clean the cart & top after each use. Grass clippings and leaves can mildew and cause damage if not properly cleaned.
- Clean the engine regularly with a cloth or brush. Remove all dirt and debris from muffler area.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Engine fails to start	<ol style="list-style-type: none"> 1. Spark plug wire disconnected 2. Fuel tank empty 3. Faulty spark plug 	<ol style="list-style-type: none"> 1. Connect wire to spark plug 2. Fill tank with clean fuel 3. Clean, adjust gap or replace
Loss of power or erratic operation	<ol style="list-style-type: none"> 1. Spark plug wire loose 2. Blocked fuel line 3. Water or dirt in fuel system 4. Dirty air cleaner 5. Carburetor out of adjustment 6. Unit running on choke 	<ol style="list-style-type: none"> 1. Connect & tighten spark plug wire 2. Clean fuel line 3. Disconnect fuel line at carburetor drain fuel tank. Refill with fresh fuel 4. Service air cleaner (refer to engine manual) 5. Adjust carburetor (refer to engine manual) 6. Move choke lever to OFF position
Engine overheats	<ol style="list-style-type: none"> 1. Carburetor not adjusted properly 2. Engine oil level low 3. OPERating below full RPM 	<ol style="list-style-type: none"> 1. Adjust carburetor (refer to engine manual) 2. Fill crankcase with proper oil 3. Run throttle full open.
Excessive vibration	<ol style="list-style-type: none"> 1. Damaged turbine or loose parts 	<ol style="list-style-type: none"> 1. Stop engine immediately and disconnect spark plug wire. Tighten all bolts & nuts. Make necessary repairs. If vibration continues, have unit serviced by an authorized dealer.
Unit won't pick up.	<ol style="list-style-type: none"> 1. Discharge chute clogged 2. Foreign object lodged in turbine. 3. Cart is full 	<ol style="list-style-type: none"> 1. Stop engine & disconnect spark plug wire. Clean inside of discharge chute. 2. Stop engine and disconnect spark plug wire. Remove lodged object in turbine. 3. Stop engine and empty cart.

NOTE: Please contact the nearest authorized service dealer for repairs beyond the minor adjustments above.

NOTES

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the user to write their notes.

OPERATING PROCEDURE



BEFORE STARTING, Follow engine manufacturer's instructions in preparing engine for operation. Never fill fuel tank indoors, with engine running, or while engine is hot. Do not smoke while filling tank

1. Inspect area to be vacuumed and pickup all harmful objects and litter. Rocks and other harmful debris can do serious damage to vacuum assembly and cause bodily injury.
2. For best vacuuming results, operate tractor at manufacturer's recommended speed for best cutting. If grass is high, mow 2 times.
3. Operate vacuum at full throttle, approximately 3800-RPM, at no load.
4. **SHUT OFF ALL ENGINES TO UNLOAD.**
5. When operating tractor on slope or grade, exercise **EXTREME CAUTION**. Do not cut across grade or slope. Mow directly up and down hills.
6. Periodically check all fasteners for tightness.
7. Listen for unusual vibration of engine or air turbine. If excessive vibration is present, **STOP ALL** engines and check for damage to turbine fan.
8. Always shut off tractor engine and vacuum engine before servicing.
9. Replace deflector shield when discharge chute is removed.
10. When removing clogs, **SHUT OFF ALL ENGINES and wait for all moving parts to come to a complete stop! Failure to do so can cause serious bodily injury!**
11. Do not carry passengers in cart.
12. Do not tow cart on public roads
13. Never exceed **Load Capacity of 750lbs.**
14. Avoid sudden turns or maneuvers.



**CAUTION!!!!
SPINNING BLADE**

MAINTENANCE AND EXTENDED STORAGE PROCEDURES

1. Wash and clean vacuum and lubricate any lubrication points. Grease wheel at axle for longer life.
2. Drain fuel from tank and run until fuel is exhausted in carburetor.
3. Drain and change the engine oil.
4. Clean tires and check pressure. Raising and supporting unit with weight off tires is recommended.
5. Store inside a clean, dry area, when not in use.

TRAIL VAC WARRANTY POLICY

Palmor Products, Inc. will repair or replace, free of charge, any part or parts that are defective in material or workmanship or both for a period of one year residential use and 90 days for commercial and rental use. The purchaser will pay transportation charges on parts submitted for replacement under warranty. For warranty service, contact your local dealer from whom the unit was purchased. There are no other express or implied warranties. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

**PALMOR PRODUCTS, INC.-5225 Serum Plant Road.-Thorntown, IN 46071
Phone: 1-800-872-2822**