

# Orbit 20/28 Pro Plus Floor Finisher Parts and Instruction Manual



**PREFACE**

Thank you for your purchase of the new industry standard for scrubbers. Minuteman International takes great pride in offering the most dependable, reliable and best value in industrial power sweepers and sweeper / scrubbers. We set the standard.

Our Customer Service Department would like to hear from you. If you see any errors, omissions or something that needs clarification in this Parts Catalog please let us know. We are working hard towards continually improving our processes to bring you the best you deserve. Please copy the form below, fill out and comment on how you found our catalog.

Thank you!  
*The Minuteman International Team*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Country: \_\_\_\_\_

Type of equipment or model number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please return to:  
Customer Service Manager  
Minuteman International, Inc.  
14N845 U.S. Route 20  
Pingree Grove, Illinois 60140 USA

Phone: (800) 323-9420  
Email: [tech@minutemanintl.com](mailto:tech@minutemanintl.com)

## Technical Specifications

**Model** Orbit 20 Pro Plus and Orbit 28 Pro Plus  
**Model:** TH20 and TH28

SPECIFICATIONS	TH20	TH28
PAD SIZE	20" X 14"	20" X 14"
PAD DRIVER TYPE	COMBINATION PAD HOLDER/DIAMOND PAD DRIVER	COMBINATION PAD HOLDER/DIAMOND PAD DRIVER
POWER SOURCE	115V 60HZ	115V 60HZ
MOTOR/HP	1.5 HP TEFC 1740 RPM	1.5 HP TEFC 1740 RPM
AMP DRAW	7.8	7.8
VIBRATION COMPENSATOR	1.25"	1.25"
CORD	2-PIECE 50' 12-3 SJTOW) (100' 12-3 OPTIONAL)	2-PIECE 50' 12-3 SJTOW) (100' 12-3 OPTIONAL)
PAD PRESSURE (LBS/IN <sup>2</sup> )***	0.71	0.65
PAD PRESSURE (LBS/FT <sup>2</sup> )***	101.83	92.94
TOTAL WEIGHT **	250	305
SHIPPING WEIGHT	283	341

\*\*WEIGHT IS CALCULATED WITHOUT THE POWER CORD

\*\*\* PAD PRESSURE DOES NOT INCLUDE THE WEIGHT OF THE POWER CORD.

### For Safety When Servicing or Maintaining Machine

- Stop on level surface.
- Unplug the machine.
- Avoid moving parts. Do not wear loose jackets, shirts, or sleeves when working on machine.
- Do not clean machine with a pressure washer.
- Authorized personnel must perform repairs and maintenance. Use Minuteman supplied replacement parts.

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**Service Information**

To obtain consistent performance over the life of your equipment, read through these instructions and save them for future reference. If you require service, contact the dealer from which the machine was purchased or an authorized Minuteman representative. Always refer to your limited Warranty for complete service information. The model, type, and serial number are indicated on the data plate on the side of the handle. From prompt and complete service, refer to these numbers when inquiring about service

SERIAL NO.		MODEL
VOLTS	PHASE	HZ
MOTOR	AMPS	H.P.

<p>Write the model and serial number of your unit in the space provided. Refer to the data plate on unit.</p>	
SERIAL #	MODEL #
<p>Retain this owners manual for future reference.</p>	

## **Features**

- Twin (dual) capacitor 180 frame TEFC (Totally Enclosed Fan-Cooled) motor keeps out dirt and dust for longer motor life.
- Extra heavy-duty spring steel cord strain relief with a 2-piece 12-3 power cord
- Low current draw
- Thumb operated safety switch
- Negative pressure on/off switch
- Dual steel operating triggers for left or right hand operation
- One-piece industrial powder coated heavy duty steel handle for optimum durability
- Welded frame for rugged, reliable performance
- 8" Non-marking, 2X8, ball bearing wheels
- Multiple position handle adjustment for operator comfort and safety
- Comfort style vinyl handle grips for ease of use
- Full wraparound dust skirt

## **Revolutionary Design that utilizes...**

- Primary vibration isolators
- Secondary vibration isolators
- Floating head to ensure 100% pad contact at all times
- Low Profile
- Quick handle/Carriage Removal

## Important Safety Instructions

When using an electrical appliance, basic precautions should always be followed, including the following:



### **WARNING:**

ELECTRIC SHOCK CAN CAUSE SERIOUS INJURY OR BE FATAL. PLEASE READ THE FOLLOWING INSTRUCTIONS ON THE USE AND OPERATIONS OF FLOOR FINISHING MACHINES.

- Your Orbit 20/28 Pro Floor Finisher is equipped with a safety switch lock and power switch triggers designed for your safety. Do not attempt to bypass or defeat the safety switch lock. Never use any device to lock the power switch triggers in the “ON” position.
- Do not leave the machine plugged in. Turn off the switch and unplug the electrical cord when not in use and before servicing or changing the brushes or pads.
- Do not allow the machine to be used as a toy. Close attention is necessary when used near children. Do not leave the machine connected to an electrical outlet unattended.
- Use only as described in this manual. Use only manufacturer’s recommended attachments.
- Do not use with a damaged cord or plug. If the machine is not working as it should, has been dropped, damaged, or left outdoors, return it to a service center before using.
- Use care to keep the electrical supply cord around sharp edges or corners. Keep the cord away from the heated surfaces.
- Connect to properly grounded (3-wire) outlet only. Refer to Grounding Instructions.
- Do not use extension cords or outlets with inadequate current carrying capacity.
- Turn off all controls before unplugging.
- Do not unplug by pulling on the cord. To unplug, grasp the plug and pull.
- Do not handle the plug or the machine with wet hands.
- Wind the cord no tighter than is necessary to retain it during storage. Refer to Cord Storage.
- Use extra care when working on or near stairs.
- Do not use in conjunction with flammable or combustible liquids such as gasoline, or use in areas where explosive vapor or dust may be present.
- Store your Orbit 20 Pro Floor Finisher indoors in a cool, dry area.
- Keep your work area well lighted.
- **WARNING:** To avoid electrical shock, use indoor only.





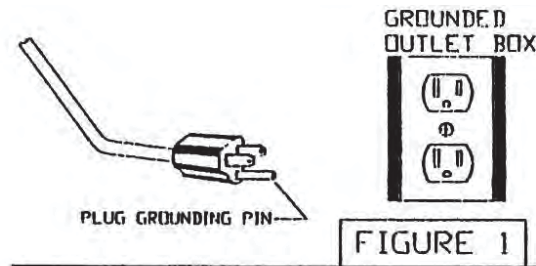
**WARNING:**

RISK OF EXPLOSION. FLOOR SANDING MACHINE CAN RESULT IN AN EXPLOSIVE MIXTURE OF FINE DUST AND AIR. USE FLOOR SANDING MACHINE ONLY IN A WELL-VENTILATED AREA, FREE FROM ANY FLAME OR MATCH

**Grounding Instructions**

This appliance must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord that has an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Improper connection of an equipment grounding conductor can result in risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified electrician. This appliance is for use on a nominal 120 volt circuit and has a grounding plug that looks like the plug illustrated in Figure 1.



## Basic Operation

To turn the machine on, the operating handle must be lowered and locked to the proper operating position before switching the machine ON. Place both hands firmly on the handle grips with your fingers around the power triggers. Do NOT apply pressure on the triggers before the safety switch lock is disengaged.

Disengage the safety switch lock by pushing it forward with one thumb. Then, while holding the safety switch lock in the disengaged position, squeeze the power triggers toward the handle grips and return your thumb to the handle grip.



To stop the machine, simply release the triggers. The safety switch lock will automatically return to the engaged position.

## Guidelines for Operation

- Your Orbit 20/28 Pro Floor Finisher is a very sensitive, powerful unit. When in operation, it should be guided gradually and smoothly without sudden or rough motions. You will want to practice with your machine on a smooth surface until you have experience in operating it.
- For ease of operation, always keep the brush or pad surface level, balanced, and flat on the floor at all times.
- Always adjust the operating handle to a comfortable height at which the brush or pad surface is balanced before starting the machine. (See Handle Adjustment Page 4)
- Your machine will operate differently on various surfaces. For example, there will be much more resistance when the machine is used on a rough surface, than when it is used on a smooth surface. The operator should be prepared to adjust for these differences.
- Begin operating the machine with the pad surface level, balanced, and flat on the floor.
- To move the machine to the right, turn the unit to the right.
- To move the machine to the left, turn the unit to the left.
- To move the machine forward or backward, keep the brush or pad flat on the floor and push or pull the machine in the desired direction.

## Handle Adjustment

The handle can be adjusted to any desired work position by simply pulling on the pull pin and move the handle to the desired position. Firmly push the pull pin back into the adjustment holes. This will lock the handle in position.

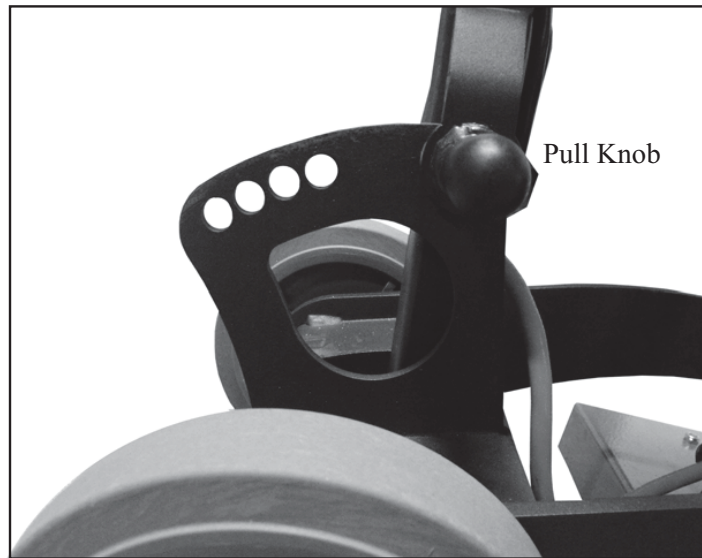


Figure 5

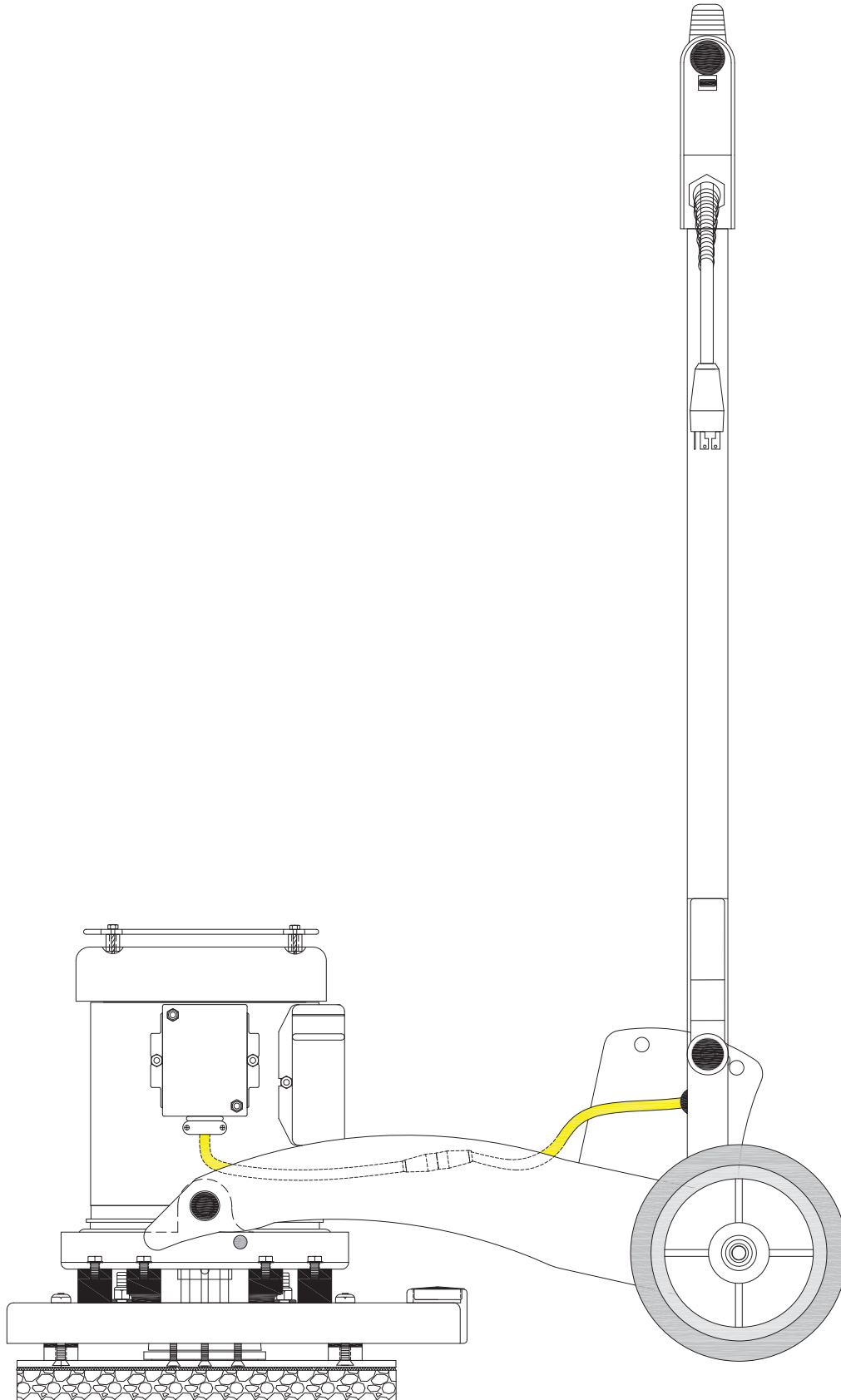
## **Cord Storage**

When not in use, loosely coil the power cord and hang on the handle.

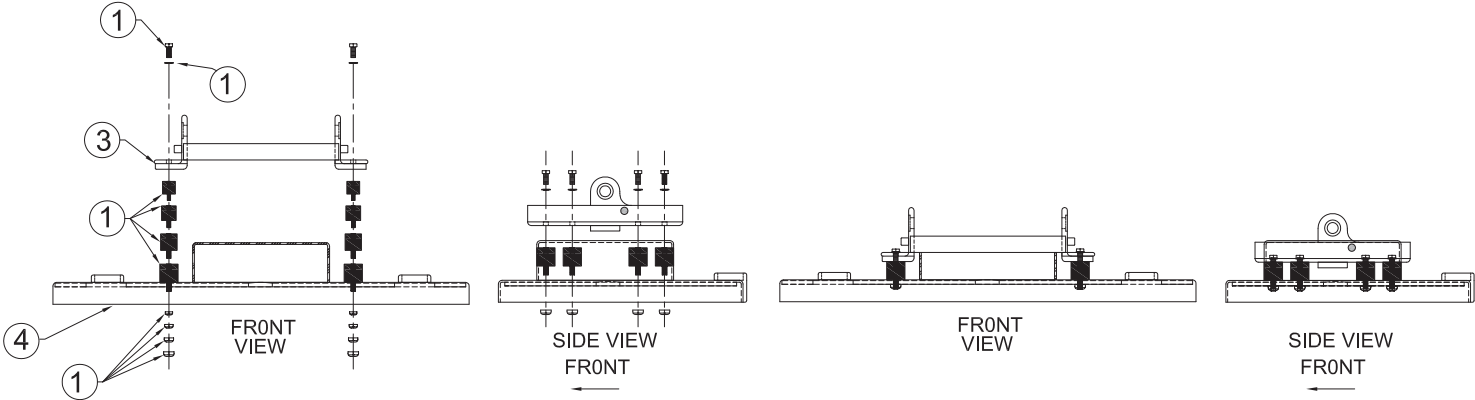
## **Cleanup and Storage**

After being used, your Orbit 20 Pro Floor Finisher can be wiped clean with a soft damp cloth and should be stored in a clean, dry place.

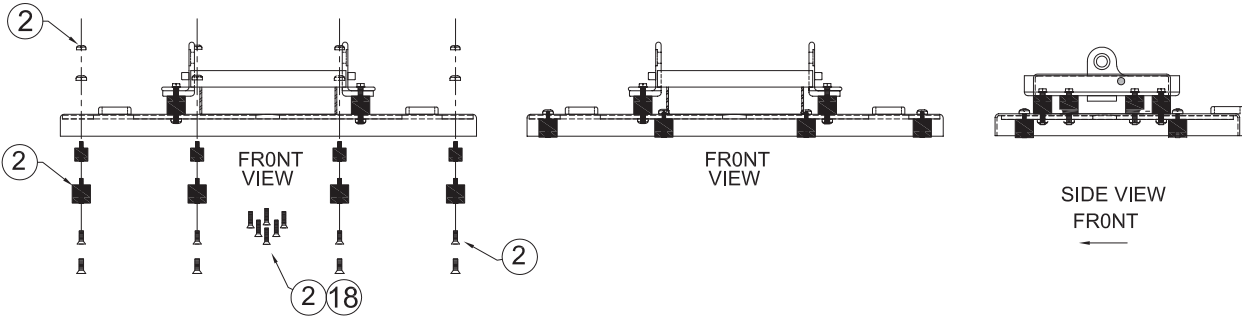
**Installation Instructions**



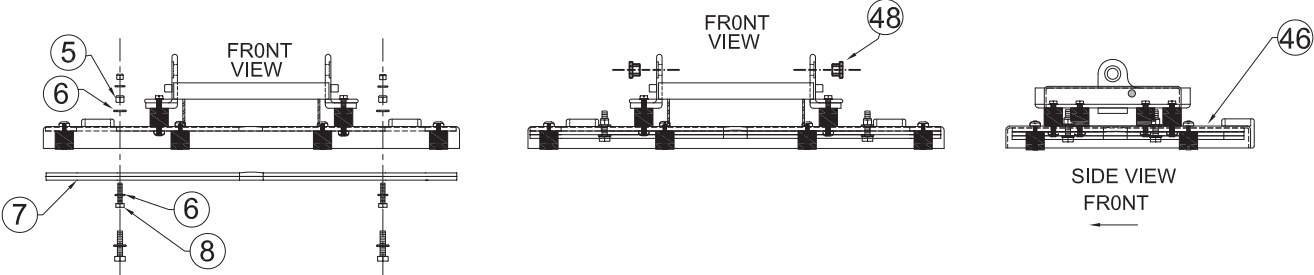
INSTALLATION OF SECONDARY ISOLATORS TO MAIN FRAME



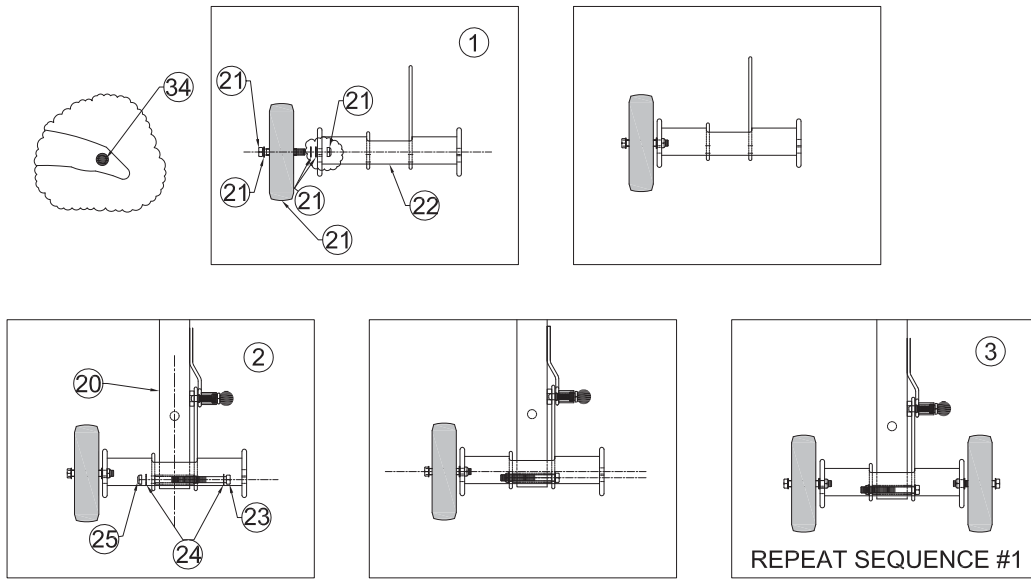
INSTALLATION OF MAIN ISOLATORS TO FRAME



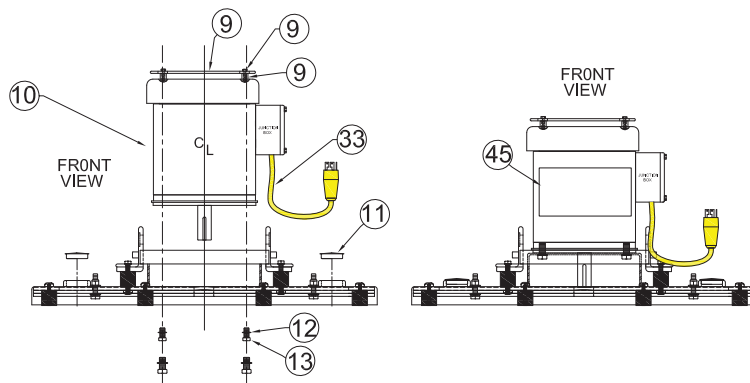
INSTALLATION OF SECOND WEIGHT TO FRAME



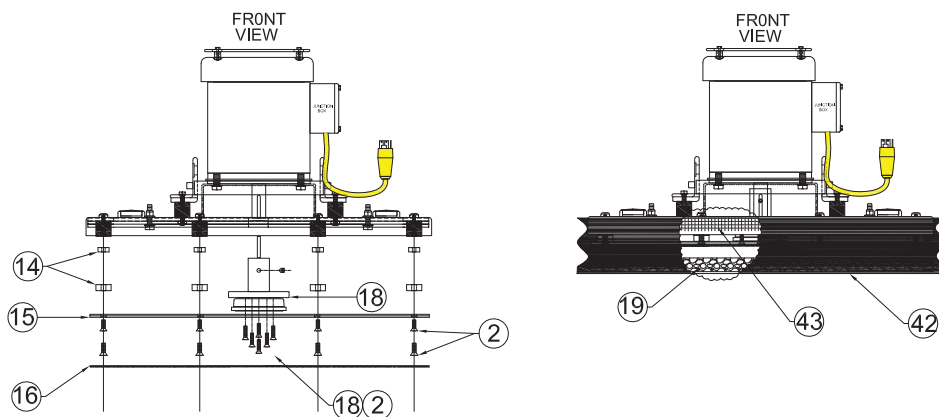
INSTALLATION SEQUENCE OF WHEELS AND HANDLE ASSEMBLY



INSTALLATION OF MOTOR AND VACUUM PORT PLUGS TO FRAME

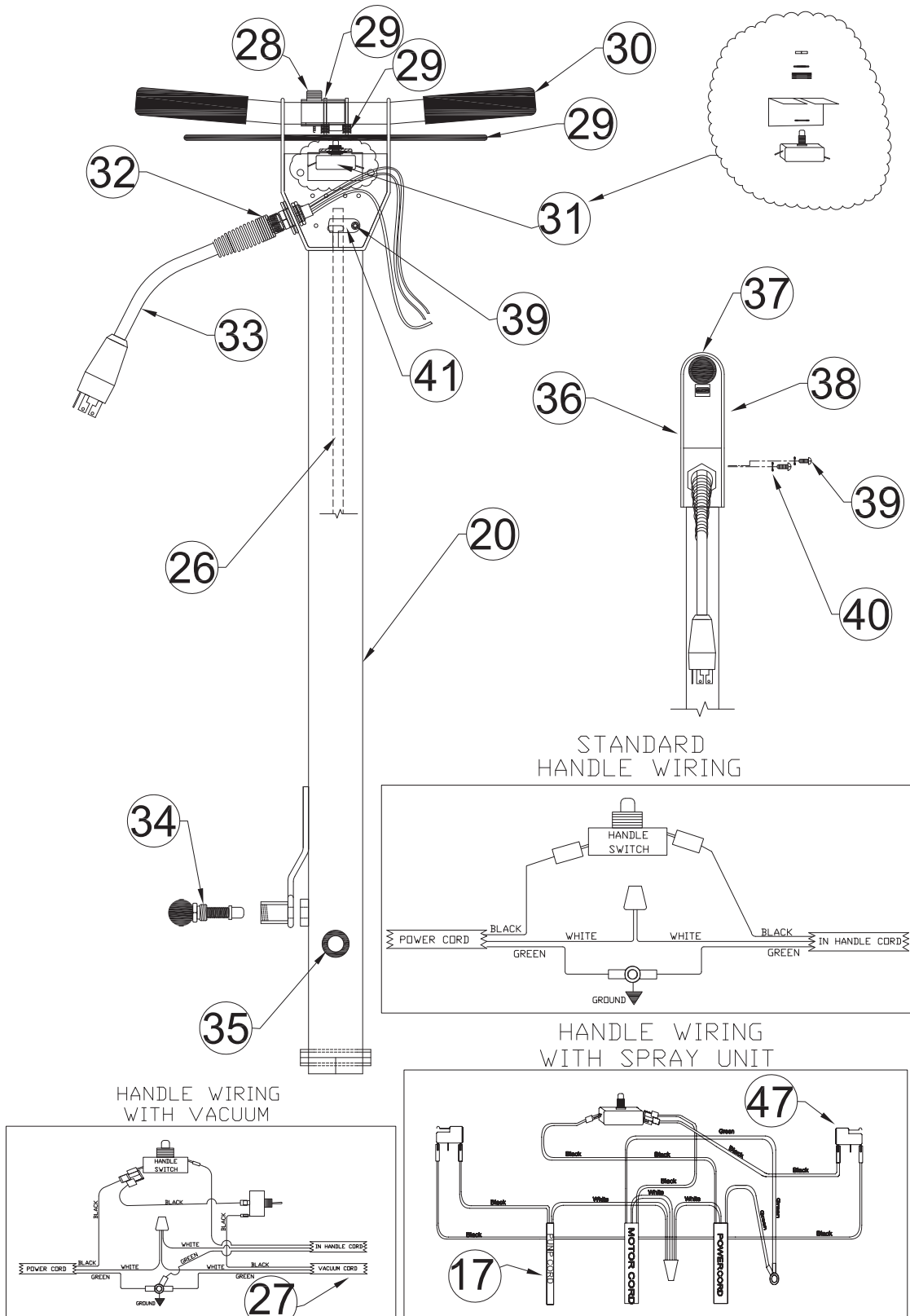


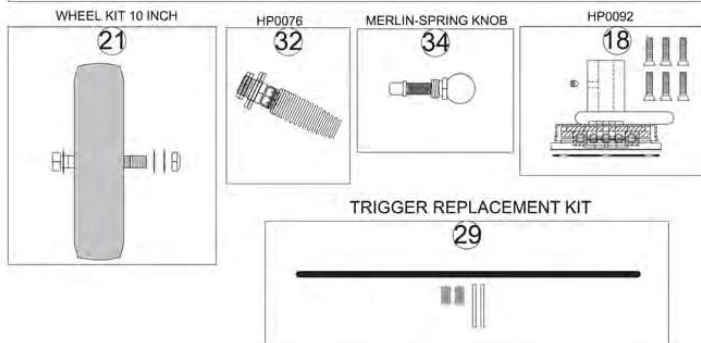
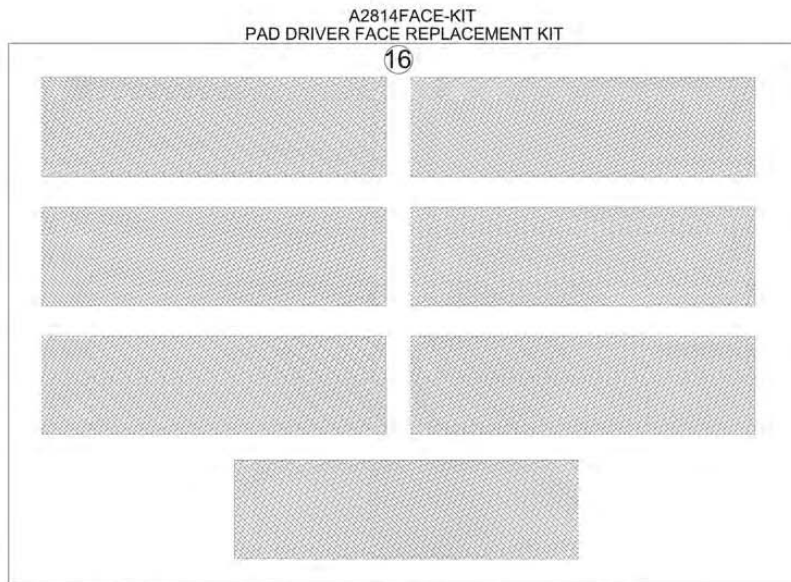
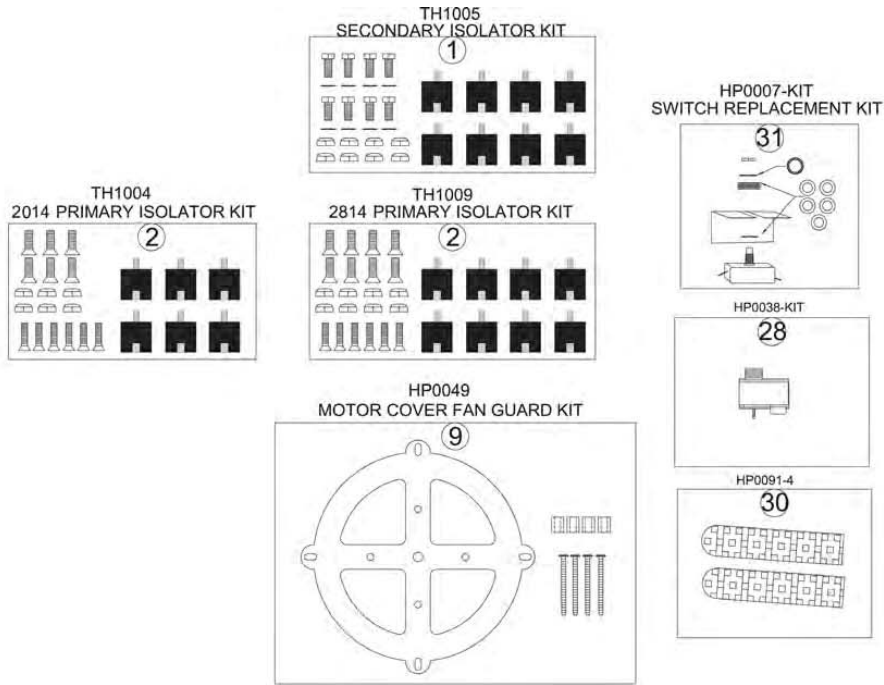
INSTALLATION OF ECCENTRIC, PAD RIVER AND PAD DRIVER FACE

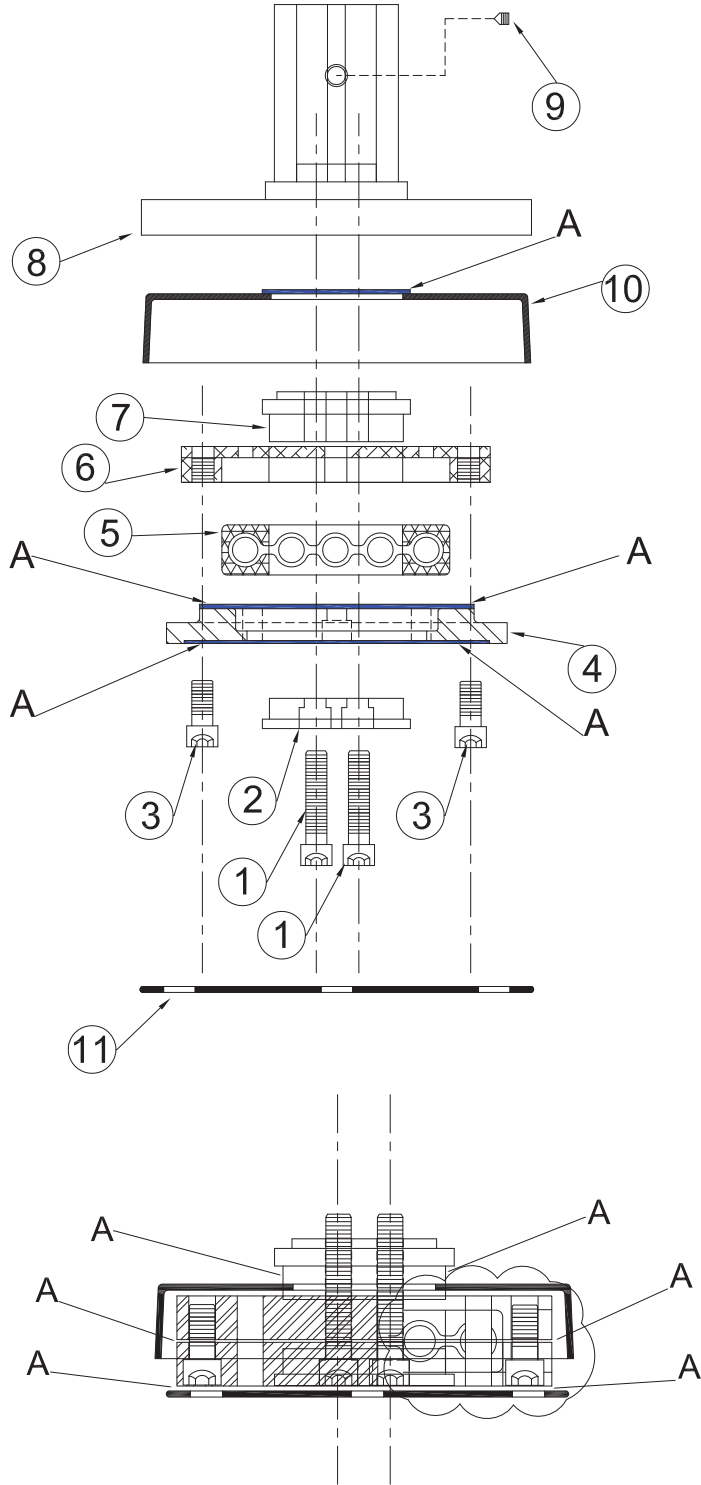
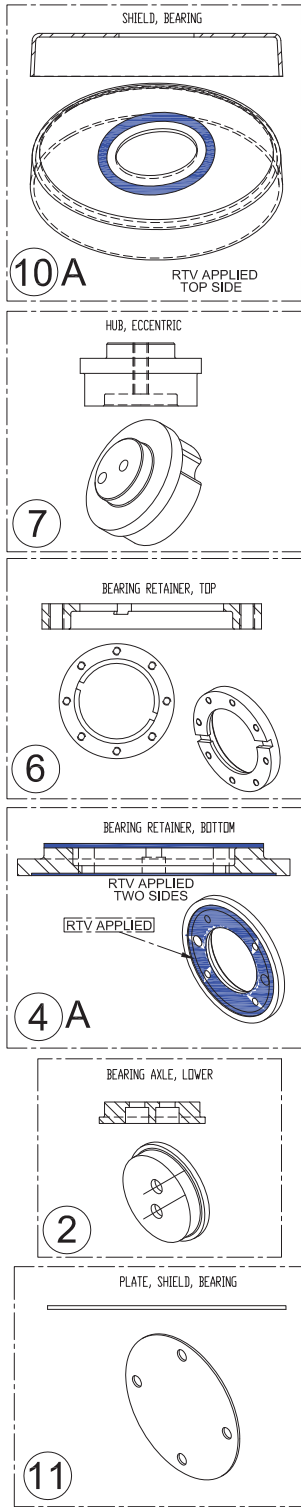


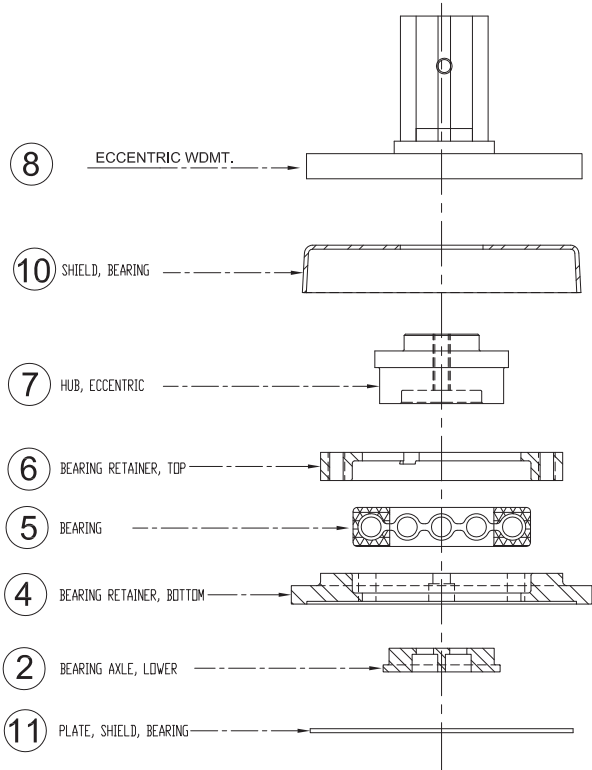












**SECTION AA**

PART NO: HP0092 ECCENTRIC DRIVE ASSY.			
DETAIL NO:	PART NO:	DESCRIPTION	QTY
1		SHCS 1/4-20X1 $\frac{1}{2}$	2
2		BEARING AXLE, LOWER	1
3		SHCS 1/4-20X $\frac{1}{2}$	2
4		BEARING RETAINER, BOTTOM	1
5		BEARING 6008-2RS/C3	1
6		BEARING RETAINER, TOP	1
7		BEARING AXLE TOP, ECCENTRIC	1
8		ECCENTRIC WDMT.	1
9		SET SCREW 5/16-18 X 3/8	1
10		SHIELD, BEARING TOP	1
11		BOTTOM PLATE, SHIELD, BEARING	1
A		RTV ULTRA BLUE GASKET MAKER	AR

## Parts List

DETAIL NUMBER	PART NUMBER	DESCRIPTION	QTY.
1	TH1005	SECONDARY ISOLATOR KIT	1
1	INC IN TH1005 KIT	BOLT HEX 5/16-18X3/4 ZN	8
1	INC IN TH1005 KIT	WASHER 5/16 INTERNAL TOOTH	8
1	INC IN TH1005 KIT	ISOLATOR 1.25	8
1	INC IN TH1005 KIT	NUT 5/16 NYLOCK THIN ZN	8
2	TH1009	PRIMARY ISOLATOR KIT	1
2	INC IN TH1009 KIT	ISOLATOR 1.25	8
2	INC IN TH1009 KIT	NUT 5/16 NYLOCK THIN ZN	8
2	INC IN TH1009 KIT	SCREW 5/16-18X1.0 FHCS STAINLESS	8
2 & 18	INC IN TH1009 KIT	SCREW 1/4-20 X 1 1/8 W/PATCH	6
3	W0013-SIBP	SECONDARY ISOLATOR BRACKET	1
4	W0013P	TIGERHAWK-MAIN FRAME	1
5	H0015	NUT 3/8 NYLOCK FULL	4
6	H0016	WASHER FLAT 3/8 USS BLK	8
7	W0013-BWT-P	BOTTOM WEIGHT	1
8	H0174	BOLT TAP 3/8-16X2 GR8	4
9	HP0049	MOTOR COVER FAN GUARD KIT	1
9	INC IN HP0049 KIT	CROSS BRACKET	1
9	INC IN HP0049 KIT	SCREW 2-1/2L SOCKET HD SM #12	4
9	INC IN HP0049 KIT	SPACER NYLON	4
10	E0030HDM-RAP	MOTOR 1.5 TEFC 115/230 60CY BLK	1
11	H0075-7	BUTTON BLUG 1.75 INCH BLK	2
12	H0200	WASHER 1/2 INTERNAL TOOTH	4
13	H0091-3	BOLT HEX 1/2-13X 1-1/4 L ZN	4
14	H0003-7	SPACER NYLON .5 THICK	8
15	S0061P	PAD DRIVER 2814	1
16	A2814FACE-KIT	PAD DRIVER FACE 2814	1
17	SM50765	INHANDLE CORD SPRAY UNIT (IF EQUIPPED)	1
18	HP0092	ESSETRIC ASSY COMPLETE	1
18	INC IN HP0092 KIT	SHCS 1/4-20 X 1 1/2	2
18	INC IN HP0092 KIT	BEARING AXLE LOWER	1
18	INC IN HP0092 KIT	SHCS 1/-20 X 1/2	2
18	INC IN HP0092 KIT	BEARING RETAINER BOTTOM	1
18	INC IN HP0092 KIT	BEARING 6008RS/C3	1
18	INC IN HP0092 KIT	BEARING RETAINER TOP	1
18	INC IN HP0092 KIT	BEARING AXLE TOP	1
18	INC IN HP0092 KIT	ECCENTRIC WDMT	1
18	INC IN HP0092 KIT	SET SCREW 5/16-18 X 3/8	1
18	INC IN HP0092 KIT	SHIELD BEARING TOP	1
18	INC IN HP0092 KIT	BOTTOM PLATE SHIELD	1
18 & 2	INC IN HP0092 KIT	SCREW 1/4-20 X 1 1/8 W/PATCH	6
18	INC IN HP0092 KIT	RTV ULTRA GASKET MAKER	AR
19	A0066-2814	BACKER PAD RED	1
20	W0002-THLP	HANDLE TIGERHAWK	1
21	WHEEL KIT 10 INCH	WHEEL KIT 10 INCH	2
21	INC IN WHEEL KIT 10 INCH	BOLT 1/2-13X3.5L GR8	1
21	INC IN WHEEL KIT 10 INCH	NUT 1/2-13 NYLOCK THIN	1
21	INC IN WHEEL KIT 10 INCH	WASHER STEEL .875X510X.03 ZN	3
21	INC IN WHEEL KIT 10 INCH	WHEEL 8.0 X 2.0 GRAY BB	1
22	W0016-CARP	CARRIAGE TIGERHAWK	1
23	H0091	BOLT 1/2-13 X 4-1/2L GR8	1
24	H0008	WASHER STEEL .875X510X.03 ZN	2
25	H0090-2	NUT 1/2-13 NYLOCK THIN	1

26	E0012-10	INHANDLE CORD MOTOR MAIN	1
27	E0012-11	INHANDLE CORD VACUUN (IF EQUIPPED)	1
28	HP0038	SAFETY SWITCH KIT	1
28	INC IN HP0038 KIT	SAFETY SWITCH	1
28	INC IN HP0038 KIT	SPRING 2 INCHES LING	1
29	HP0095	TRIGGER KIT 14 INCH BLK	1
29	INC IN HP0095 KIT	ROLL PIN	2
29	INC IN HP0095 KIT	SPRING	2
29	INC IN HP0095 KIT	TRIGGER 14 INCH BLK	1
30	HP0091-4	HANDLE GRIP KIT OF 2	1
31	HP0007-KIT	SWITCH KIT ON/OFF	1
31	INC IN HP0007-KIT	SWITCH ON/OFF	1
31	INC IN HP0007-KIT	LOCK WASHER 3/8 INTERNAL TOOTH	1
31	INC IN HP0007-KIT	WASHER - ZINC PLATED STEEL 3/8	4
31	INC IN HP0007-KIT	SWITCH INSULATION	1
32	HP0076	STRAIN RELIEF KIT	1
32	INC IN HP0076 KIT	WASHER STRAIN RELIEF	2
32	INC IN HP0076 KIT	STRAIN RELIEF	1
32	INC IN HP0076 KIT	NUT ( APPLETON BL50 OR L 100 )	1
33	SM50727	PIGTAIL IN HANDLE/ MOTOR LEAD	2
34	MERLIN-SPRING KNOB	KNOB ASSY. HANDLE ADJUSTMENT	3
35	H0028	GROMMET HANDLE	1
36	L0063	LABEL SWITCH BOX TIGERHAWK	1
37	W0003P	SWITCH BOX COVER	1
38	L0005-1	SAFETY LABEL	1
39	H0040	SCREW 10-24X.5 ROLL FORM ZN	6
40	H0020	LOCK WASHER #10 INTERNAL TOOTH	4
41	H0065	LOOP CLAMP .375	1
42	A2814-SKIRT	DUST SKIRT 2814	1
43	LOOP VALCRO	INCLUDED WITH A2814-SKIRT #51	1
44	SM50698-1	POWER CORD 50 FOOT EXTENSION	1
45	L0061	TIGERHAWK MOTOR LABEL	1
46	L0062	WARNING LABEL MAIN FRAME	1
47	AR50964-KIT	MICRO SWITCH & BRACKET KIT(VAC UNIT IF EQUIPPED)	1
47	INC IN AR50964-KIT	MICRI SWITCH BRACKET	1
47	INC IN AR50964-KIT	MICRO SWITCH	2
47	INC IN AR50964-KIT	JUMPER WIRE MICRO SWITCHES	1
47	INC IN AR50964-KIT	JUMPER WIRE MAIN SWITCH	1
47	INC IN AR50964-KIT	INSULATION MICRO SWITCH	2
47	INC IN AR50964-KIT	NUT #2-56 HEX	4
47	INC IN AR50964-KIT	WASHER LOCK #2 INTERNAL	4
47	INC IN AR50964-KIT	SCREW #2-56 X 1/2L	4
47	INC IN AR50964-KIT	SCREW 10-24 X 1/2	2
47	INC IN AR50964-KIT	WASHER KOCK #10	2
48	M0071	BUSHING SPRING LOCK	2
49	SM50698-1	EXTENSION CORD 50 FOOT 12-3 YELLOW	1

## Accessories



Optional integrated vacuum system (Dust skirt included with every TigerHawk)



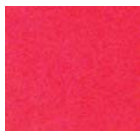
Transport cart that comes with each unit



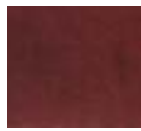
Optional spray system

## Miscellaneous Pads

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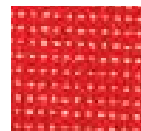
Backer Pads



Floor Prep Pads



Pads



Sanding Screens





## Minuteman International Made Simple Commercial Limited Warranty

### REVISION Q EFFECTIVE 4/10/18

Minuteman International, Inc. warrants to the original purchaser/user that the product is free from defects in workmanship and materials under normal use. Minuteman will, at its option, repair or replace without charge, parts that fail under normal use and service when operated and maintained in accordance with the applicable operation and instruction manuals. All warranty claims must be submitted through and approved by factory authorized repair stations.

This warranty does not apply to normal wear, or to items whose life is dependent on their use and care, such as belts, cords, switches, hoses, rubber parts, brushes, electrical motor components or adjustments. Parts manufactured by Minuteman are covered by and subject to the warranties and/or guarantees of their manufacturers. Please contact Minuteman for procedures in warranty claims against these manufacturers.

**Special warning to purchaser** -- Use of replacement filters and/or pre-filters not manufactured by Minuteman or its designated licensees, will void all warranties expressed or implied. A potential health hazard exists without original equipment replacement.

All warranted items become the sole property of Minuteman or its original manufacturer, whichever the case may be.

Minuteman disclaims any implied warranty, including the warranty of merchantability and the warranty of fitness for a particular purpose. Minuteman assumes no responsibility for any special, incidental or consequential damages.

This limited warranty is applicable only in the U.S.A. and Canada, and is extended only to the original user/purchaser of this product. Customers outside the U.S.A. and Canada should contact their local distributor for export warranty policies. Minuteman is not responsible for costs or repairs performed by persons other than those specifically authorized by Minuteman. This warranty does not apply to damage from transportation, alterations by unauthorized persons, misuse or abuse of the equipment, use of non-compatible chemicals, or damage to property, or loss of income due to malfunctions of the product.

If a difficulty develops with this machine, you should contact the dealer from whom it was purchased.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

Model	Parts	Labor	Poly	Travel**
Cord Electric Group	5yrs	3yrs	12yrs	90 days
Battery Auto Scrubbers (incl. on board charger)	5yrs	3yrs	12yrs	90 days
Battery and Manual Sweepers	3yrs	3yrs	12yrs	90 days

**Exceptions.....**

Model	Parts	Labor	Poly	Travel**
Port A Scrub, all models (incl. on board charger)	1yr	6months	12yrs	90 days
A3S Blower	1yr	1yr	0	0
Phenom Dual Motor Upright Vacuums	2yrs	2yrs	0	0
Explosion Proof Vacuum	1yr	1yr	0	0
Propane Burnisher	1yr	1yr	0	90 days
E14BQP and E14115 scrubber	1yr	1yr	12yrs	90 days
EZ-Mop	1yr	1yr	0	90 days
ROS-17	1yr	1yr	0	90 days
**Travel, 2 hours max				

<i>Stand-alone Battery Chargers:</i>	One year
<i>Replacement Parts:</i>	Ninety days
<i>Batteries:</i>	0-3 months full replacement, 4-12 months pro-rate
<i>Polypropylene Plastic Tanks:</i>	12yr warranty, no additional labor

# ***“Excellence Meets Clean”***

**Minuteman is a Full Line Manufacturer of Sweepers and Scrubbers,  
for Industrial Facilities.**