

AVANI Type I Dust Collector

General Safety Information

MACHINE WARNING SIGNS

▲ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

▲ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

▲ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Used without the safety alert symbol (▲) indicates potentially hazardous situation which, if not avoided, may result in property damage.



Warning of electric shock



Do not expose the equipment to rain or use in damp locations.



Do not use the equipment around flammable products, if not avoided, sparks can ignite vapors from flammable products. Read and understand all warnings and operating instructions before using this equipment. Failure to follow all instructions may result in electric shock, fire, and/or serious personal injury or property damage.



Figure 1

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

avani
environmental



AVANI Type I Dust Collector

TABLE OF CONTENT

MACHINE WARNING SIGNS	1
Specifications.....	2
ADDITIONAL DUST COLLECTOR SAFETY RULES	4
Assembly	5
Installation	5
ELECTRICAL INSTALLATION	5
Operation	6
Filters.....	9
Control panel.....	12
Accumulated Function:	12
Pulse Cleaning Setting:.....	13
Repair Parts Illustration and Repair Parts List.....	14
Repair Parts List.....	15
Technical Data for Repair Parts	20
Appendix 1 - Electrical Circuit Diagram	22
Contact Information	27

Specifications

Motor	5HP
.....	460V / 60Hz / 3Ph
Air Volume (C.F.M.)	2340 Ft ³ /Min (66 M ³ /Min)
Packing Size (L x W x H) Main Machine	54" x 46" x 89.6" (137 x 117 x 227.5 cm)
Net Weight	842 lbs (382 kgs)
Gross Weight	882 lbs (400 kgs)

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

avani
environmental

SMT-20111026



AVANI Type I Dust Collector

General Safety Information

(Continued)

▲WARNING

*Use this product
carefully to*

*effectively avoid any possible danger.
Observe the following safety
regulations to avoid bodily injury due
to electrocution during use.*

Read this Manual carefully before operating the product and preserve the Operation Manual properly.

1. Keep work area clean and organized.
 - A disorderly working environment will cause inconvenience and danger during operation.
2. Check if the working environment is suitable for using the product.
 - Do not use the product in a humid environment.
 - Use the product in a good working environment to reduce risks.
 - Do not use the product in a flammable gas or liquid environment to avoid danger.
3. Keep other persons away from the

product, except for the operator, to avoid danger.

- Do not let children get close to the product. All wires used by the product shall be in a safe location to prevent children from touching them.
4. All tools shall be safely stored.
 - When the tools are not used, please store them in a dry place safely beyond the reach and access of children.
 5. If the machine breaks down, contact a service technician. Do not attempt to repair and possibly damage the machine.
 6. When using the product, be sure to put on a welding suit and mask.
 7. Use the electrical wires correctly.
 - During use, do not drag the electrical wires forcefully. Do not use these wires if fraying or current leakage occurs to avoid injury to the operator.
 8. Before replacing parts, shut off power to the machine.
 - Check that the switch is in "on" or "off" position. Do not attempt the replacement when the machine is

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

avani
environmental

SMT-20111026



AVANI Type I Dust Collector

running. To replace parts or filter material, make certain that the switch is "off".

9. Use the power cord correctly. The total length of power cord shall not exceed 10 feet to avoid low power due to a drop in voltage and to prevent a possible hazard.

▲WARNING

When connecting the product, always follow the instructions in the Operation Manual to avoid injuries.

10. Care and Maintenance:

- Confirm that the parts/accessories have been fully assembled and will not adversely affect the machine operation.
- Check if the machine is operated properly.
- Replace damaged parts or accessories according to the instructions of the Manual. If the said instructions are not specified in the Manual, have a professional technician carry out the maintenance or replacement.
- Check that the electrical specifications of this machine meet safety requirements, and that the maintenance is carried out by a

professional technician. Use original manufacturer's parts and accessories to avoid injury.

- If a problem occurs, contact your dealer immediately.

ADDITIONAL DUST COLLECTOR SAFETY RULES

The Dust Collector can be dangerous if it is operated incorrectly. Therefore, the product must be used cautiously to avoid causing a hazard or damage. Unnecessary injuries may occur by failing to follow the instructions of the Safety Rules Manual. Be sure to put on protection equipment or suit that can protect your body, such as helmet and eye mask to avoid injuries from occurring. If any doubts or any unfitness occurs during use, be sure to stop the operation immediately. Keep in mind that the user shall be liable for using according to the specified safety rules and for operating the machine correctly.

1. Read this Manual carefully before operating the product.
2. Be sure to follow local electrical and safety regulations and observe the electrical safety standards practiced in the relevant area. All electrical wire

AVANI Type I Dust Collector

connections and installation shall be carried out by a professional technician.

3. Do not operate the product near flammable materials, as sparks may ignite these materials and cause an explosion. Please confirm there aren't any flammables near the working site to avoid hazard.
4. This product is suitable for collecting smoke and welding oil gas. Do not use it in collecting iron chips and dust at the same time to avoid producing sparks.
5. Before replacement of parts or filter materials, be certain that the switch is disconnected.
6. Do not kink the power cord and keep it away from oil, chemicals or flammables.
7. Check that the voltage, phase count and grounding wire match the machine requirements.
8. When the fan blades are operated at high speed, do not reach hand near these blades to prevent finger from breaking or clothes/necktie from getting caught. Do not put the hand or foreign matter into the air inlet to avoid getting caught in the high-speed rotation of fan blades.

9. When not in use, all air inlets of Welding Smoke Treatment Machine shall be covered.

Assembly

▲WARNING

Do not connect the Welding Smoke

Treatment Machine before the assembly is finished and you have read and understood all of the precautions stated in the Manual.

NOTE: For correct assembly, refer to the Illustrations and Parts List on pages 15-20.

Installation

MOVING AND TRANSPORTATION

The net weight of this machine is about 842 lbs. It CANNOT be handled and transported without the help of lifting tools. For your safety, read all instructions carefully.

▲WARNING

Do not move without the help of others to avoid causing danger.

ELECTRICAL INSTALLATION

POWER CONNECTION

1. Confirm that the power is properly connected under normal power supply condition. It is recommended to provide manual shutdown device before

AVANI Type I Dust Collector

connecting power.

2. It is recommended to protect the control equipment with suitable grade of fuse, and the length of fuse and power cord shall not be over 10 feet.

SHUTDOWN

1. Disconnect power by manual method.
2. When stopping operation, check if the switch is under off status.

EARTHING WIRE

Connect yellow/green wires to the earthing wire power jack. Confirm that the earthing wire has been properly connected before connecting main power cord to the machine at all times.

⚠ WARNING

Do not disconnect the wiring jack

before cutting off power!

POWER INSTALLATION AND STORAGE

The electrical power is configured as following. If conditions are beyond the scope stated below, then it is required to ensure that the power is well arranged and safe.

- Ambient temperature: Between 41°F and 131°F. If the time is over 24 hours, then the ambient average temperature shall not be over 122°F.
- Humidity: Between 30% and 95%

- Altitude: 3,280 feet
- Moving and Storing: -13°F to 131°F. For short-time storage (less than 24 hours), the storage temperature can be up to 158°F.

Operation

PRIOR TO START UP

Purpose: The Dust Collector is specially suitable for treating the smoke generated during ordinary welding processing work, which can effectively collect and screen the smoke resulting from the welding work in maintaining the air quality of the working environment.

- Before starting the machine, be sure to read this Manual carefully.
- Before starting the machine, check if relevant safety protection measures have been taken according to the Manual.
- Before starting the machine, watch the motor turning direction according to the instruction of arrow direction.

START UP

1. To ensure satisfactory performance for the Welding Smoke Treatment Machine, please confirm the air volume, power

AVANI Type I Dust Collector

and the matching table of the Welding Smoke Treatment Machine.

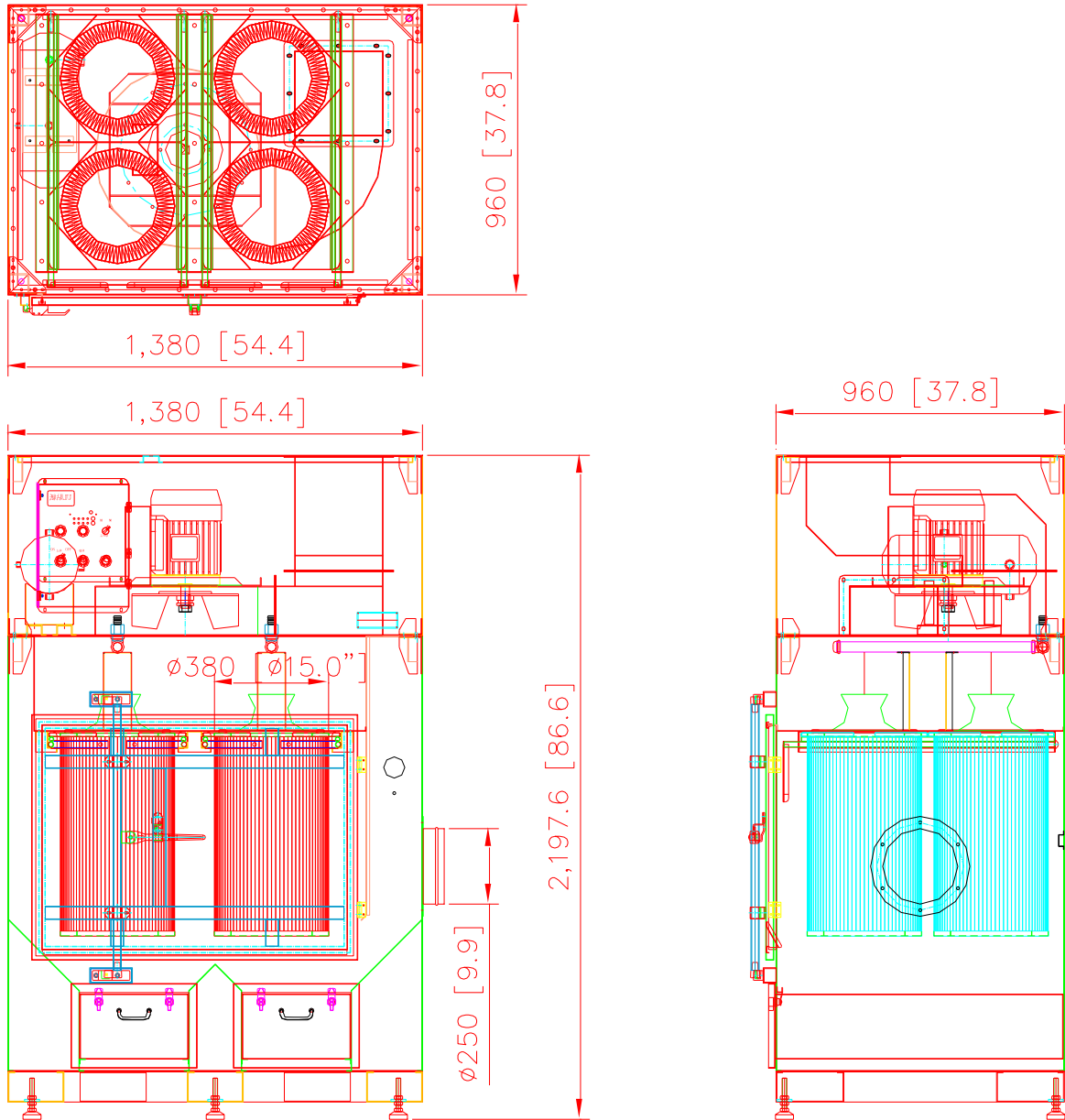
2. Connect power according to electrical installation procedure after installing the Welding Smoke Treatment Machine and the table. Disconnect power according to electrical installation procedure when the machine is not used.
3. The Welding Smoke Treatment Machine shall be turned on and off by pushing I/O button. Under normal operation status, use such I/O button.

Unpacking

The machine should be unpacked carefully. Check if the machine and components are consistent with those indicated in the Parts List. If any doubt arises or when the components are incomplete, contact your dealer.

AVANI Type I Dust Collector

Dimensions (in mm/inches)



AVANI Type I Dust Collector

Filters



1. cartridge filter

Figure 2 - Filters

- (2) quantity: 4 pcs
- (3) material: Polyester with TEFLON treatment & coating.
- (4) filtering area: $15\text{m}^2 \times 4 = 60\text{ m}^2$ (645.6 ft²)

- **Cartridge filter replacement procedure:**



1. **PLEATED CARTRIDGE FILTER** that can be cleaned by push-button pulse-jet cleaning of the cartridge filter from an onboard air tank.

(1) specification: $\text{Ø}380 \times 660 \text{ mm}$ [$\text{Ø}15'' \times 26''$]

1. Open the front maintenance door.

AVANI Type I Dust Collector



2. Loosen the knobs (circled in green).
Release the filter handle fixing plates.
Slide the filter handle fixing plates.



3. Pull down the left and right filter handles.
4. Take out the cartridge filter set.
5. Slide the new cartridge back into the track and push it to the end.
6. Push back the left and right filter handles to secure the cartridges in position.

AVANI Type I Dust Collector



7. Pull up the left and right filter handles.



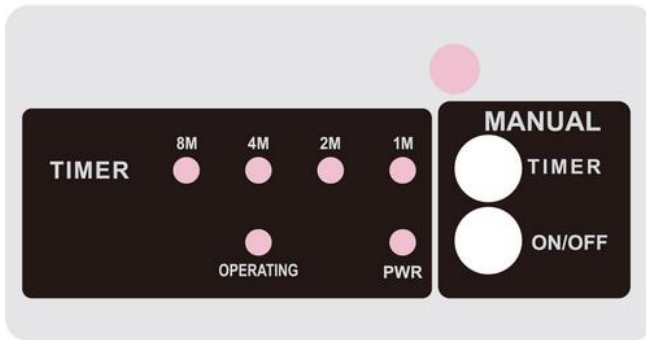
8. Attach the filter handle fixing plate upon the left and right filter handles. Adjust and secure them in position. Fasten the plates and handles with knobs (circled in green).



9. Close the front maintenance door. Assembly completed.

AVANI Type I Dust Collector

Control panel



8M/4M/2M/1M: Time setting indicating light (accumulated function)

TIMER: Time adjusting button

ON/OFF: ON / OFF button

PWR: Power indicating light

OPERATING: Operation indicating light

Accumulated Function:

1. When operating, timer will automatically set to release air in every 1 minute.
2. Press TIMER once, the time setting light will be switched to 2M. Press it one more time, both 1M and 2M lights will be on, so the time is accumulated to clean in every 3 minutes.
3. Press TIMER again, the time setting light

will be switched to 4M.

4. Press it one more time, both 1M and 4M lights will be on and the time is accumulated to clean in every 5 minutes. Press it again, both 2M and 4M lights will be on and the time is accumulated to clean in every 6 minutes. Press it again, the 1M, 2M and 4M lights will be on and the time is accumulated to clean in every 7 mins.
5. Following this cycle, the time setting may be adjusted manually to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12 and 15 mins. The maximum allowance time setting would be 15 mins.

AVANI Type I Dust Collector

Pulse Cleaning Setting:

Timer Operation (Accumulated Function)				
Pulse Frequency	8M	4M	2M	1M
ON				●
1			●	
2			●	●
3		●		
4		●		●
5		●	●	
6		●	●	●
7	●			
8	●			●
9	●		●	
10	●	●		
11	●	●	●	●

AVANI Type I Dust Collector

Repair Parts Illustration and Repair Parts List
For Repair Parts, call +1-919-570-2862
24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

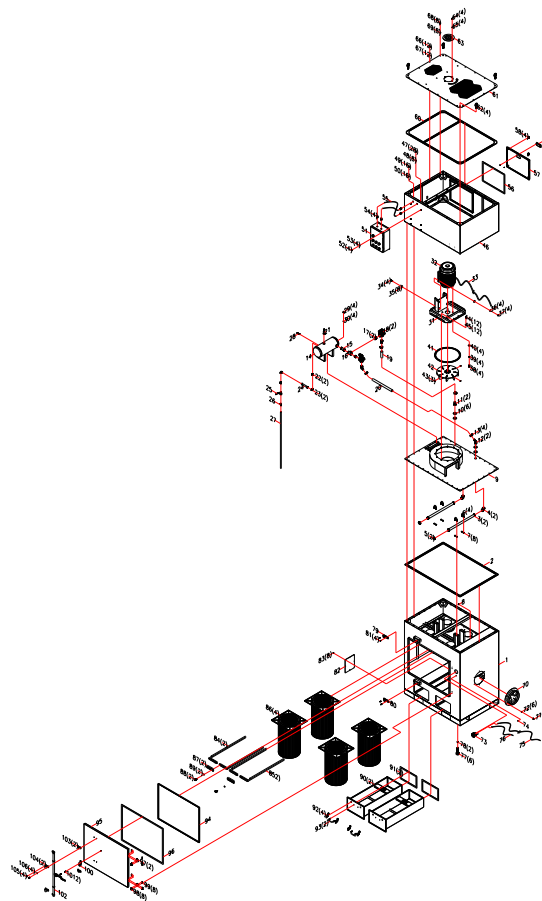


Figure 3

AVANI Type I Dust Collector

Repair Parts List

Repair Parts List for Dust Collector

Reference Number	Description	Part Number	Quantity
1	Machine Body	A02-01-FE-2100L-5-4-1	1
2	Foam Tape	A02-01-FE-2100L-5-4-2	1
3	Nipple	A02-01-FE-2100L-5-4-3	2
4	Elbow	A02-01-FE-2100L-5-4-4	2
5	1" Cap	A02-01-FE-2100L-5-4-5	2
6	U-Shaped Clamp	A02-01-FE-2100L-5-4-6	4
7	Flange Nut (3/8")	A02-01-FE-2100L-5-4-7	8
8	Manometer Bushing	A02-01-FE-2100L-5-4-8	1
9	Top Cover	A02-01-FE-2100L-5-4-9	1
10	Flat Washer	A02-01-FE-2100L-5-4-10	6
11	Connector	A02-01-FE-2100L-5-4-11	2
12	Elbow Connector	A02-01-FE-2100L-5-4-12	2
13	Clamp	A02-01-FE-2100L-5-4-13	4
14	Air Tank	A02-01-FE-2100L-5-4-14	1
15	Nipple	A02-01-FE-2100L-5-4-15	1
16	Connector	A02-01-FE-2100L-5-4-16	1
17	Nipple	A02-01-FE-2100L-5-4-17	2
18	Magnetic Valve	A02-01-FE-2100L-5-4-18	1
19	Hose	A02-01-FE-2100L-5-4-19	1
20	Hose	A02-01-FE-2100L-5-4-20	1
21	Safety Valve	A02-01-FE-2100L-5-4-21	1
22	Nipple	A02-01-FE-2100L-5-4-22	2
23	Elbow	A02-01-FE-2100L-5-4-23	2

AVANI Type I Dust Collector

Reference Number	Description	Part Number	Quantity
24	Nipple	A02-01-FE-2100L-5-4-24	1
25	Switch Valve	A02-01-FE-2100L-5-4-25	1
26	Connector	A02-01-FE-2100L-5-4-26	1
27	PVC Hose	A02-01-FE-2100L-5-4-27	1
28	Nipple	A02-01-FE-2100L-5-4-28	1
29	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-29	4
30	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-30	4
31	Motor Base	A02-01-FE-2100L-5-4-31	1
32	NEMA Motor	A02-01-FE-2100L-5-4-32	1
33	CSA Power Cord	A02-01-FE-2100L-5-4-33	1
34	Hex Screw (3/8"*1-1/2")	A02-01-FE-2100L-5-4-34	4
35	Flat Washer (3/8"*OD28*3t)	A02-01-FE-2100L-5-4-35	8
36	Lock Washer (3/8")	A02-01-FE-2100L-5-4-36	4
37	Hex Nut (3/8")	A02-01-FE-2100L-5-4-37	4
38	Hex Screw (1/2"*3/4")	A02-01-FE-2100L-5-4-38	4
39	Flat Washer (1/2"*OD28*3t)	A02-01-FE-2100L-5-4-39	4
40	Lock Washer (1/2")	A02-01-FE-2100L-5-4-40	4
41	Foam Tape	A02-01-FE-2100L-5-4-41	1
42	Aluminum Impeller	A02-01-FE-2100L-5-4-42	1
43	Setscrew	A02-01-FE-2100L-5-4-43	3
44	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-44	12
45	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-45	12
46	Machine Upper Chamber	A02-01-FE-2100L-5-4-46	1
47	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-47	28
48	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-48	28

AVANI Type I Dust Collector

Reference Number	Description	Part Number	Quantity
49	Hex Screw (3/8"*1")	A02-01-FE-2100L-5-4-49	16
50	Flat Washer (3/8"*OD23*2t)	A02-01-FE-2100L-5-4-50	16
51	UL Control Panel	A02-01-FE-2100L-5-4-51	1
52	Hex Screw (1/4"*3/4")	A02-01-FE-2100L-5-4-52	4
53	Flat Washer (1/4"*OD19*2t)	A02-01-FE-2100L-5-4-53	4
54	Strain Relief	A02-01-FE-2100L-5-4-54	4
55	Power Cord	A02-01-FE-2100L-5-4-55	2
56	Foam Tape	A02-01-FE-2100L-5-4-56	1
57	Machine Upper Chamber - Back Maintenance Door	A02-01-FE-2100L-5-4-57	1
58	Lock	A02-01-FE-2100L-5-4-58	4
59	Wrench	A02-01-FE-2100L-5-4-59	1
60	Foam Tape	A02-01-FE-2100L-5-4-60	1
61	Machine Upper Chamber Cover	A02-01-FE-2100L-5-4-61	1
62	Eye Bolt	A02-01-FE-2100L-5-4-62	4
63	Motor Access Panel	A02-01-FE-2100L-5-4-63	1
64	Hex Screw (1/4"*5/8")	A02-01-FE-2100L-5-4-64	4
65	Flat Washer (1/4"*OD19*2t)	A02-01-FE-2100L-5-4-65	4
66	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-66	12
67	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-67	12
68	Hex Screw (3/8"*1")	A02-01-FE-2100L-5-4-68	8
69	Flat Washer (3/8"*OD23*2t)	A02-01-FE-2100L-5-4-69	8
70	10" Connector	A02-01-FE-2100L-5-4-70	1
71	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-71	6
72	Flat Washer (5/16"*OD23*2t)	A02-01-FE-2100L-5-4-72	6

AVANI Type I Dust Collector

Reference Number	Description	Part Number	Quantity
73	Pressure Gauge	A02-01-FE-2100L-5-4-73	1
74	Manometer Bushing	A02-01-FE-2100L-5-4-74	1
75	PVC Hose	A02-01-FE-2100L-5-4-75	1
76	PVC Hose	A02-01-FE-2100L-5-4-76	1
77	Adjustable Feet	A02-01-FE-2100L-5-4-77	6
78	Hex Nut	A02-01-FE-2100L-5-4-78	6
79	Compression Latch (right)	A02-01-FE-2100L-5-4-79	1
80	Compression Latch (left)	A02-01-FE-2100L-5-4-80	1
81	Countersunk Phillips Head Screw (5/16"*5/8")	A02-01-FE-2100L-5-4-81	4
82	Seal Board	A02-01-FE-2100L-5-4-82	1
83	Sheet Metal Screw	A02-01-FE-2100L-5-4-83	8
84	Filter Handle (left)	A02-01-FE-2100L-5-4-84	2
85	Filter Handle (right)	A02-01-FE-2100L-5-4-85	2
86	Cartridge Filter	A02-01-FE-2100L-5-4-86	4
87	Filter Handle Fixing Plate	A02-01-FE-2100L-5-4-87	2
88	Knob (5/16"*3/4")	A02-01-FE-2100L-5-4-88	2
89	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-89	2
90	Handle	A02-01-FE-2100L-5-4-90	2
91	Foam Tape	A02-01-FE-2100L-5-4-91	2
92	Drawer Lock	A02-01-FE-2100L-5-4-92	4
93	Drawer Handle	A02-01-FE-2100L-5-4-93	2
94	Seal	A02-01-FE-2100L-5-4-94	1
95	Door	A02-01-FE-2100L-5-4-95	1
96	Foam Tape	A02-01-FE-2100L-5-4-96	1

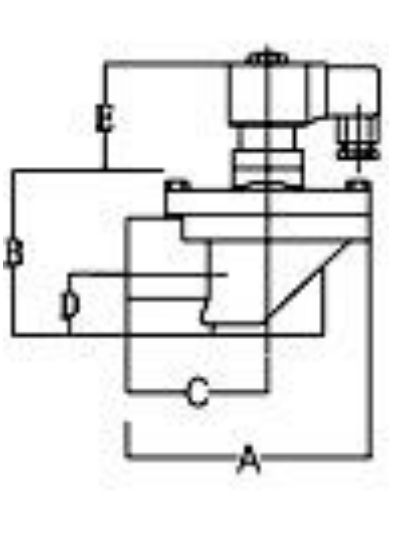

AVANI Type I Dust Collector

Reference Number	Description	Part Number	Quantity
97	Hinge	A02-01-FE-2100L-5-4-97	2
98	Cap Screw	A02-01-FE-2100L-5-4-98	8
99	Flange Nut	A02-01-FE-2100L-5-4-99	8
100	Compression Latch	A02-01-FE-2100L-5-4-100	1
101	Countersunk Phillips Head Screw (1/4"*5/8")	A02-01-FE-2100L-5-4-101	2
102	Door Stud	A02-01-FE-2100L-5-4-102	1
103	Door Stud Base	A02-01-FE-2100L-5-4-103	2
104	Door Stud Cover	A02-01-FE-2100L-5-4-104	2
105	Hex Screw (5/16"*3/4")	A02-01-FE-2100L-5-4-105	4
106	Flat Washer (5/16"*OD18*2t)	A02-01-FE-2100L-5-4-106	4

AVANI Type I Dust Collector

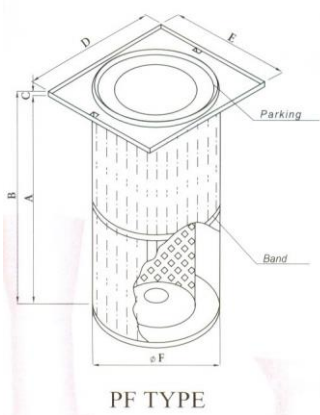
Technical Data for Repair Parts

Reference Number	Description	Part Number	Quantity
1	Solenoid Valve	AVANI-FE-2100L-5-4-1	2

			
Model		LPDA25C	
INCHES		1"	
ORIFICE	A	92	
	B	80	
	C	52	
	D	37	
	E	65	

AVANI Type I Dust Collector

Reference Number	Description	Part Number	Quantity
2	Cartridge Filter	AVANI-FE-2100L-5-4-2	4



PF TYPE (Measurement m/m)

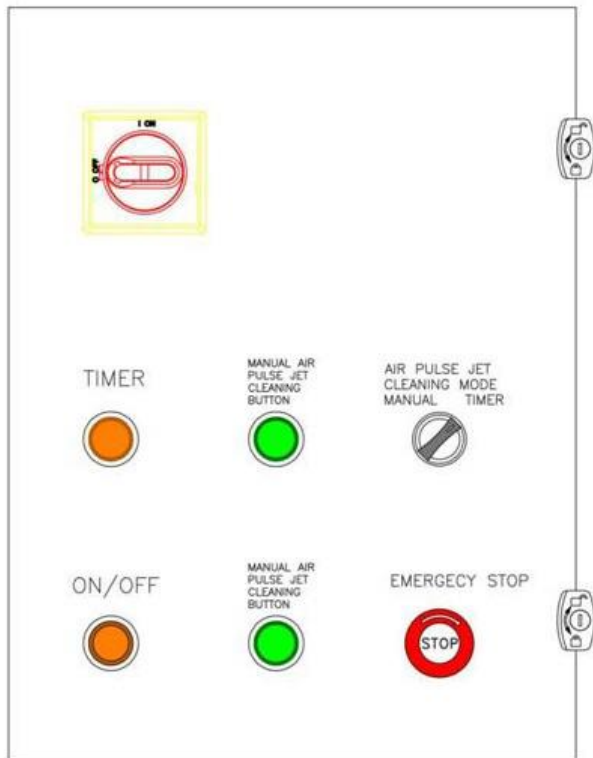
Diameter	Fold Depth	A	B	C	D	E	F	Weight kg	Filtering Area M ²
380	48	660	673	12	421.4	459.2	380	—	15



AVANI Type I Dust Collector

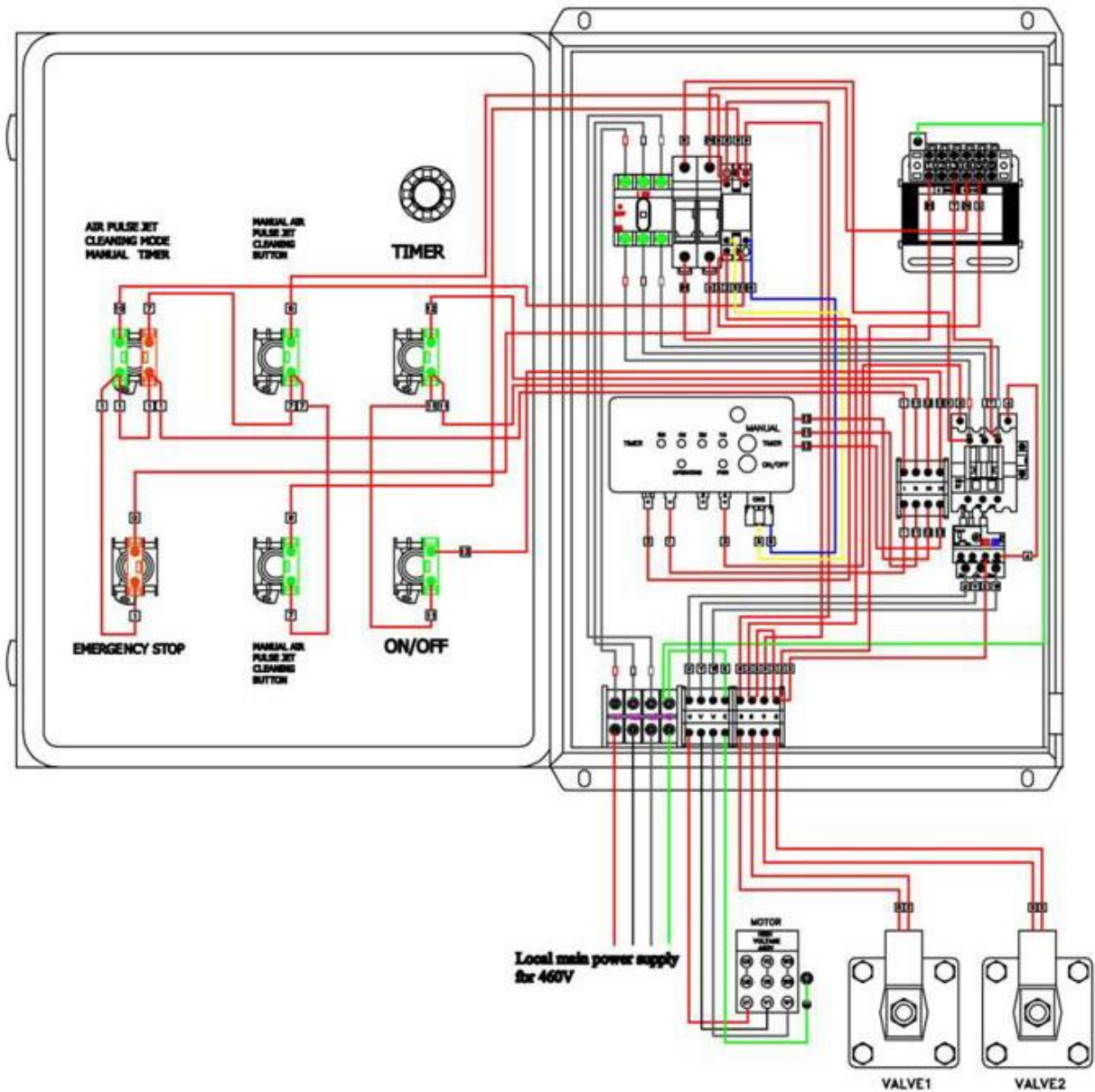
Appendix 1 - Electrical Circuit Diagram

Main Electrical Components for SDC-5-4 Control Box



AVANI Type I Dust Collector

Main Electrical Components for SDC-5-4 Control Box



AVANI Type I Dust Collector

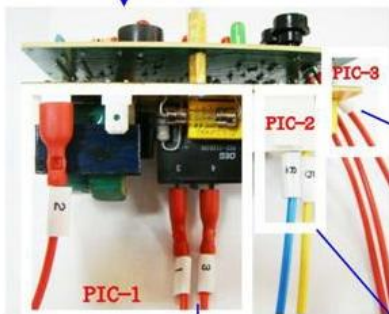
Main Electrical Components for SDC-5-4 Control Box



◆ IC Board (Front)

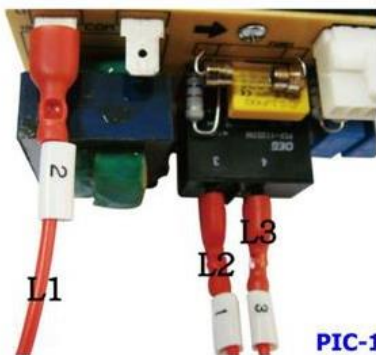


◆ IC Board (Back)



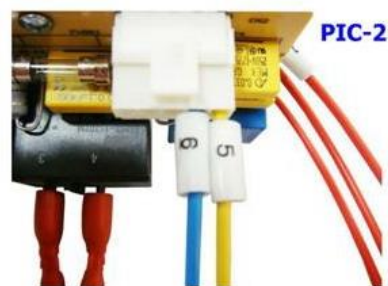
PIC-3

- ◆ 12 : TIMER.
- ◆ 13 : ON/OFF



PIC-1

- ◆ L1/L2 : The main power.
- ◆ L3 : The blower.



PIC-2

- ◆ Air pulse jet system.

AVANI Type I Dust Collector

Main Electrical Components for SDC-5-4 Control Box



◆ Transformer for 460V.



◆ Panel disconnect switch.



◆ Fuse bus.



◆ Relay.



AVANI Type I Dust Collector

Main Electrical Components for SDC-5-4 Control Box



◆ Magnetic contactor.



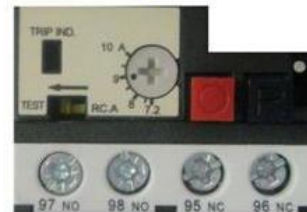
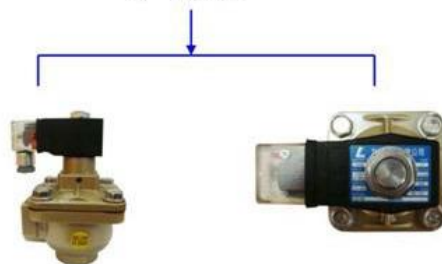
◆ Air pulse jet system.



◆ Thermal Relay for motor of 5HP.



◆ Valve.



AVANI Type I Dust Collector

Contact Information

Avani Environmental Intl. Inc.
95 Cypress Drive,
Youngsville, NC 27596
Email: info@avanienvironmental.com
www.avanienvironmental.com

Customer Service: info@avanienvironmental.com
Tel: 919-570-2862 ext. 5167

Engineering Service: engineering@avanienvironmental.com
Tel: 919-570-2862 ext. 5167