

EXPLOSION PROOF VACUUM AV1000/ 2000-EX

Installation, Operation, Maintenance & Service

Model No.

Serial No.

Filter No.

Start-Up Date:



Revision: B
Date: 05/06/2010

1



Ruwac Industrial Vacuums
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ISO 9001
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WARRANTY

1. RUWAC warrants that new equipment which are complete units and are sold and/or manufactured by RUWAC, Inc. will be free from defects in material and workmanship for a period of 18 months from date of shipment or 12 months from date of start-up, whichever come first. RUWAC warrants that replacement parts sold hereunder will be free from defects in material or workmanship for a period of 120-days after the date of shipment. RUWAC machines that have been completely re-built at the factory will carry a 180-day warranty from date of shipment. All field repairs performed by authorized RUWAC service personnel are covered by a 120-day parts only warranty.

2. RUWAC, Inc. will not assume any responsibility under the terms of this limited warranty on equipment, which has not been paid in full. This warranty does not apply to any equipment that has been disassembled, repaired, or otherwise altered by any person without the written authorization of RUWAC'S service department, nor does it apply to any product that has been subjected to failure sure to corrosive or abrasive attack, misused, damaged, or improperly installed, nor does it apply to motors, controls, and components not manufactured by RUWAC, Inc. Motors, controls, and other Sub vendor's components therefor are warranted only to the extent of the manufacture's warranty. All warranty work on such products must be authorized by RUWAC, Inc. and must be performed in an authorized shop as designated by the manufacturer. RUWAC sole liability and buyer's sole and exclusive remedy hereunder is the replacement or repair at RUWAC'S option of products not complying with this warranty. Such repair or replacement shall be F.O.B. RUWAC'S factory, and RUWAC reserves the right to invoice all expenses incurred when repairs are made in the field at the request of the customer, except as specifically set forth herein, RUWAC makes no warranty express or implied, with respect to the products and/or service supplied hereunder, this warranty is in lieu of and excludes all other warranties, including without limitation, any warranty of merchantability, fitness for a particular purpose, or conformance to purchaser's specifications.



SAFETY INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS VACUUM

WARNING - To reduce the risk of fire or injury:

1. Use only for the pickup of dry settled material. Do not use for the pickup of liquids.
2. Do not pick up ignition sources such as smoldering cigarettes, matches or hot ashes.
3. Pay special attention to the reactive properties of the material being vacuumed. Insure that the material is not reactive with other materials present in the machine or its materials of construction. Check your MSDS carefully for special hazards ie. Impact sensitivity.
4. Do not operate this vacuum with missing or damaged filters.
5. Inspect the vacuum for visible damage. The vacuum must be removed from service and repaired prior to use.
6. Use only Ruwac replacement parts, accessories and hoses specifically designed for your machine.
7. Remove compress air from vacuum when not being used or when being serviced.
8. This vacuum is not designed for outside use or use in wet applications.
9. Start and use only when ground cable connected to a verified ground point to be true earth.



START-UP

1. Pull up on the dust pan lever to release the dust pan and slide out. Check that it is empty, slide back into place and step down on the lever locking the dust pan into place.
2. Connect air supply to On /Off ball valve. For AV 1000-EX with 70 PSI at 65 CFM, use a 1/2 NPT unrestricted pipe line. For AV 2000-EX 100 PSI at 100 CFM, use a 1" NPT unrestricted pipe.
3. Connect ground cable to a verified ground point to be true earth.



INSPECTION & MAINTENANCE

WARNING:

Always wear a dust mask when performing filter inspections or service.

Standard Filter Inspection

1. Shut off machine and disconnect from compressed air source.
2. Move the vacuum to a non-hazardous, well ventilated area.
3. Pull up on the foot lever to release the dust pan and empty if needed.
4. Using a mirror and flash light inspect the filter from the area where the dust pan was removed.
5. Remove any material between the pleats by hand. Always wear proper safety equipment when handling hazardous materials.
6. Inspect the filter pleats for any damage.
7. Inspect ground clamp has rated continuity to venturi deck.

WARNING:

Care should be exercised when cleaning the filter. Make sure that you are familiar with the material present in the vacuum and any handling or exposure warnings for that material. Consult the MSDS for this information.

Standard Filter Replacement

WARNING:

The motor deck assemble is heavy, follow safe lifting procedures.

1. Turn the machine off and disconnect from compress air source.
2. Follow the preceding filter inspection procedure to determine if removal is necessary.
3. Remove all of the housing component socket cap screws with a 5/32" hex-wrench.
4. Remove the silencer assembly.
5. Remove the venturi deck and disconnect any ground wires.
6. Disconnect the clear differential pressure gauge tubes from the respective barbed fittings if so equipped.
7. Remove the HEPA filter housing spacer and HEPA adapter assembly if so equipped.
8. Remove filter housing spacer assembly.
9. Turn the filter housing assembly over on a flat work surface then carefully work the filter off the filter shaker insert.



INSPECTION & MAINTENANCE

10. Remove and save the black filter mesh pads for use in the new filter.

WARNING:

The removed filter must be disposed of in accordance with the MSDS instructions for the material present in the filter. Some materials require special disposal. Consult your Safety engineer for specific disposal instructions.

11. Install the new filter into the filter shaker insert by taking special not to damage the filter material while sliding the filter over the inserts.
12. Seat the filter housing spacer assembly on the base oriented as removed.
13. Reinstall the housing components making sure they are properly seated and that all ground wires and differential pressure tubes are securely reconnected.
14. Reinstall the venturi deck, ground wire and silencer assembly.
15. Using the 5/32" hex wrench, align the housing spacer mounting holes by inserting the wrench into the holes to see if they align. Shift the housing components if needed.
16. Reconnect the compress air source and turn the vacuum on.
17. Cover the inlet with a piece of wood or cardboard to compress the housing spacers and reinstall the mounting screw. This will help to align mounting holes, be careful not to cross thread the screws.

HEPA Filter Removal and Installation

1. Turn off the vacuum and disconnect from the compress air source.
2. Move the vacuum to a non-hazardous well ventilated location.
3. Remove the silencer assembly and the venturi deck.
4. Remove the hold down brackets for the HEPA filter.
5. Remove the HEPA filter and dispose of as directed in the filter disposal warning listed for the standard filters.
6. Install the replacement HEPA filter with the gasket facing down, centering the filter on the mounting plate.
7. Instal the hold down brackets and tighten the mounting screws so that the filter is evenly seated.
8. Reinstall the venturi deck and silencer assembly. Make sure that all grounding wires are reconnected.
9. Align the mounting holes using the tip of the 5/32" hex wrench.
10. Connect the compress air source and turn the vacuum on.
11. Cover the inlet with a flat piece of wood or cardboard to compress the housing gaskets and reinstall the mounting screw. This will help to align mounting holes, be careful not to cross thread the screws.

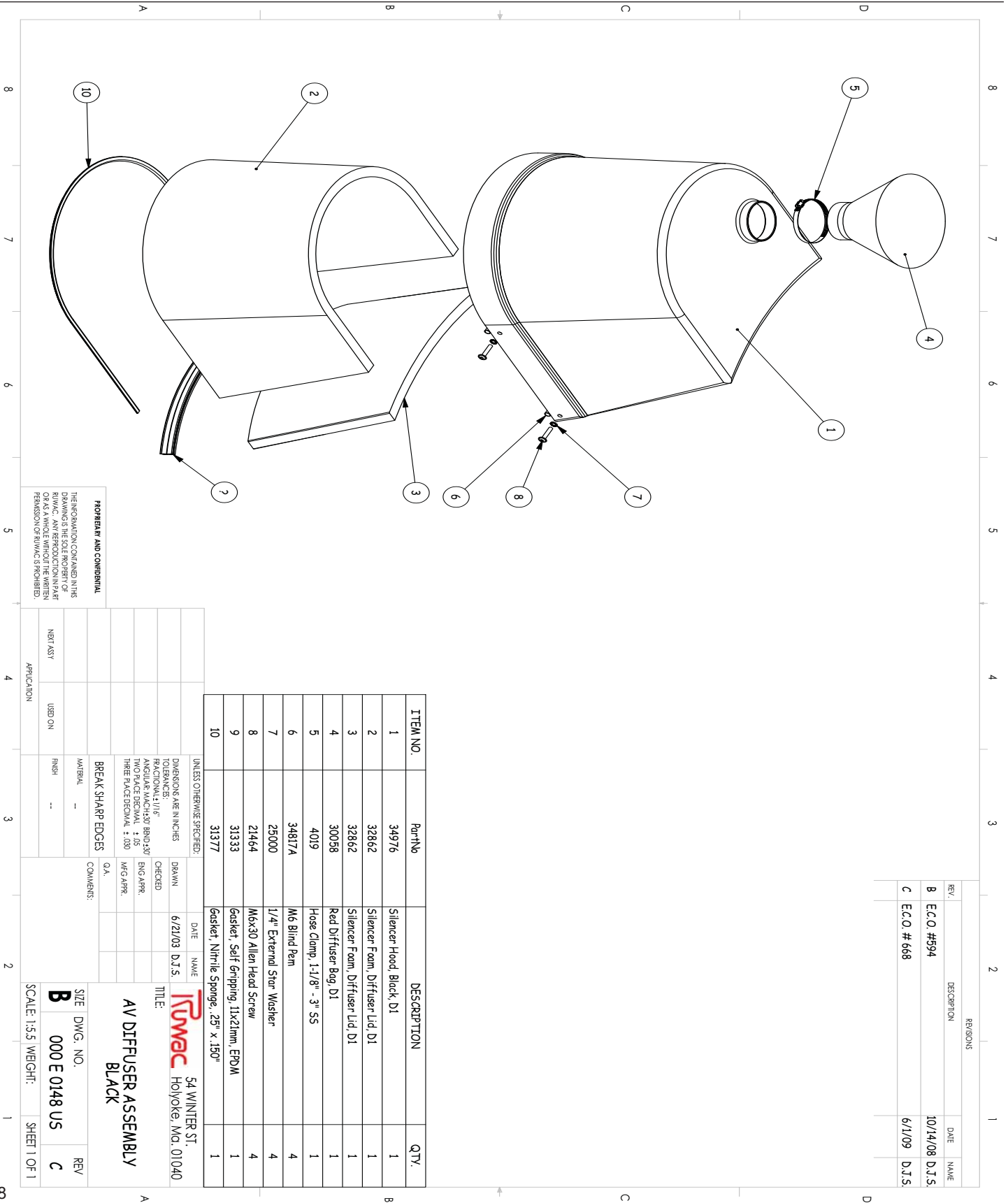


TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Insufficient Vacuum Pressure	- Dustpan improperly seated	- Remove dustpan, inspect seal, replace dustpan.
	- Filter clogged or improperly seated	- Follow filter inspection procedure, section IV.
	- Clogged hose	- Remove hose and re-inspect vacuum pressure, if vacuum pressure returns to normal, snake hose.
	- Under sized compressed air supply	For AV 1000-EX with 70 PSI at 65 CFM, use a 1/2 NPT unrestricted pipe line. For AV 2000-EX 100 PSI at 100 CFM, use a 1" NPT unrestricted pipe.
	- Unit is improperly sealed	- Block the inlet with a flat and rigid material to place the unit under vacuum pressure then inspect for air leaks.
Air Leaks	- Worn or poorly seated seals, fasteners improperly installed	- Block the inlet with a flat and rigid material to place the unit under vacuum pressure then remove fasteners and turn the unit off. Inspect all seals for completeness, then reseal secure components, again under vacuum pressure.
Material In Exhaust; On Top Side of Filter	- Poor filter seal or torn filter	- Follow filter inspection procedure in previous pages.



PARTS



REV.	DESCRIPTION	DATE	NAME
B	E.C.O. #594	10/14/08	D.J.S.
C	E.C.O. # 668	6/1/09	D.J.S.

ITEM NO.	Part No	DESCRIPTION	QTY.
1	34976	Silencer Hood, Black, D1	1
2	32862	Silencer Foam, Diffuser Lid D1	1
3	32862	Silencer Foam, Diffuser Lid D1	1
4	30058	Red Diffuser Bag, D1	1
5	4019	Hose Clamp, 1-1/8" - 3" SS	1
6	34817A	M6 Blind Pin	4
7	25000	1/4" External Star Washer	4
8	21464	M6x30 Allen Head Screw	4
9	31333	Gasket, Self Gripping, 11x21mm, EPDM	1
10	31377	Gasket, Nitrile Sponge, .25" x .150"	1

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 FRACTIONAL: 1/16"
 ANGULAR: MACH 30° BRND 30°
 TWO PLACE DECIMAL: .05
 THREE PLACE DECIMAL: .000

CHECKED: [Signature] ENG APPR.
 DATE: 6/21/03 D.J.S.
 DRAWN: [Signature] MFG APPR.

COMMENTS:
 Q.A.
 BREAK SHARP EDGES

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SIZE: B
 DWG. NO.: 000 E 0148 US
 SCALE: 1:1.5 WEIGHT: C
 SHEET 1 OF 1



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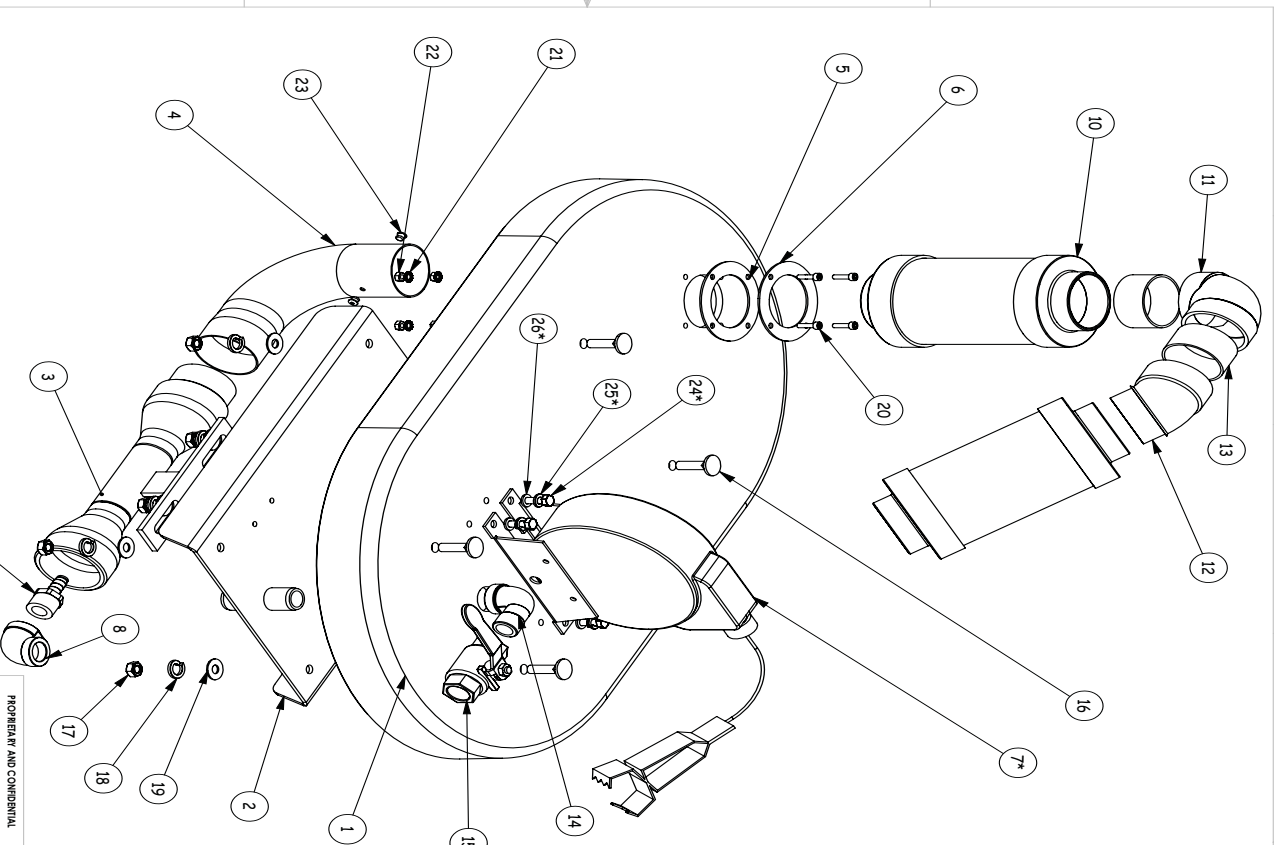
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REV.	DESCRIPTION	DATE	NAME
H	E.C.O. # 591	9/24/08	D.J.S.
I	E.C.O. # 675	5/26/09	D.J.S.

* - DENOTES PART AS OPTIONAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90228-1	AV1000 Deck	1
2	31808	Venturi Plate, AV1000	1
3	31663	VENTURI	1
4	901835	90deg EL, 2" Custom SS, For AV	1
5	34870	Inlet Gasket, 50mm	1
6	2000605	50mm Inlet Ring SS	1
7*	34878	Grounding Reel, Static Control, Automatic Spring Rewind	1
8	316225	Elbow 90deg, 1/2" NPT SS	1
9	31623	Hose Barb, 1/2" NPT x 3/8" Barb	1
10	CY802350	PVC Silencer, 6"	2
11	CY701585	90 Elbow, 2" PVC	1
12	CY701588	45 Street Elbow One Exp, 2" PVC	1
13	-	2" PVC Tube, 1 1/2" Long Section	2
14	3161755	Elbow 90 Deg, 1/2" NPT, Street, Stainless Steel	1
15	3162455	Ball Valve, 1/2" NPT, Full Port, SS	1
16	25030	Carriage Bolt, M8x30	4
17	20044	M8 Hex Nut, Zinc	6
18	20050	M8 Split Lock Washers, Zinc	6
19	25061	M8 Flat Washer, Zinc	6
20	32868	M5x16 Socket Head Cap Screw	4
21	32867	M5 Ext Tooth Lock Washer, Zinc	4
22	32873	M5 Hex Nut, Zinc	4
23	3299001	Rivet, Blind, 1/4" Long x 5/32"	2
24*	32903	M6x20 Hex Cap Screw, Zinc	4
25*	20039	M6 Split Lock Washer, Zinc	4
26*	25067	M6 Flat Washer	4



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UNLESS OTHERWISE SPECIFIED:	DATE	NAME
DIMENSIONS ARE IN INCHES	9/24/08	D.J.S.
TOLERANCES		
FRACTIONAL: 1/16"		
ANGULAR: MACH 30° BRND 30°		
TWO PLACE DECIMAL: ± .05		
THREE PLACE DECIMAL: ± .003		
MFG APPR.		
Q.A.		
COMMENTS:		
BREAK SHARP EDGES		
MATERIAL	C.R.S.	
FINISH	--	
USED ON		
APPLICATION		

54 WINTER ST.
 Holyoke, MA 01040
AV 1000 DECK

SIZE DWG. NO. **B**
 000 E 0054 US
 SCALE: 1:4 WEIGHT: SHEET 1 OF 1



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REV.	DESCRIPTION	DATE	NAME
L	PRINT REVISED, E.C.O. # 663	4/15/09	D.J.S.
M	PRINT REVISED, E.C.O. # 675	5/26/09	D.J.S.

* - DENOTES OPTIONAL PART

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90228-2	AV2000 Deck	1
2	31810	Venturi Plate, AV2000	1
3	31663	VENTURI	2
4	901835	90deg EL, 2" Custom SS For AV	2
5	34870	Inlet Gasket, 50mm	2
6	2000605	50mm Inlet Ring SS	2
7*	34878	Grounding Reel, Static Control, Automatic Spring Rewind	1
8	25030	Carriage Bolt, M8x30	4
9	20044	M8 Hex Nut, Zinc	8
10	20050	M8 Split Lock Washer, Zinc	8
11	25061	M8 Flat Washer, Zinc	8
12	32868	M8x16 Socket Head Cap Screw	8
13	32867	M8 Ext Tooth Lock Washer, Zinc	8
14	32873	M5 Hex Nut, Zinc	8
15	3299001	Rivet, Blind, 1/4" Long x 5/32"	4
16*	32903	M6x20 Hex Cap Screw, Zinc	4
17*	20039	M6 Split Lock Washer, Zinc	4
18*	25067	M6 Flat Washer	4
19	3165254	Dual Venturi Tee Assembly, Stainless Steel	1
20	349165	Elbow, 1" NPT x 90Deg Street, Stainless Steel	1
21	316255	Ball Valve, 1" Full Port Stainless Steel	1
22	-	2" PVC Tube, 1 1/2" Long Section	4
23	CY701588	45 Street Elbow, One Exp, 2" PVC	2
24	CY701585	90 Elbow, 2" PVC	2
25	CY802350	PVC Silencer, 6"	4
26	31623	Hose Barb, 1/2" NPT x 3/8" Barb	2
27	316505	Reducing Bushing, Stainless Steel, 1" NPT x 1/2" NPT, Hex	2

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL: ±.11"
 ANGULAR: MACH: ±30° BRND: ±30°
 TWO PLACE DECIMAL: ±.05
 THREE PLACE DECIMAL: ±.030

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BREAK SHARP EDGES

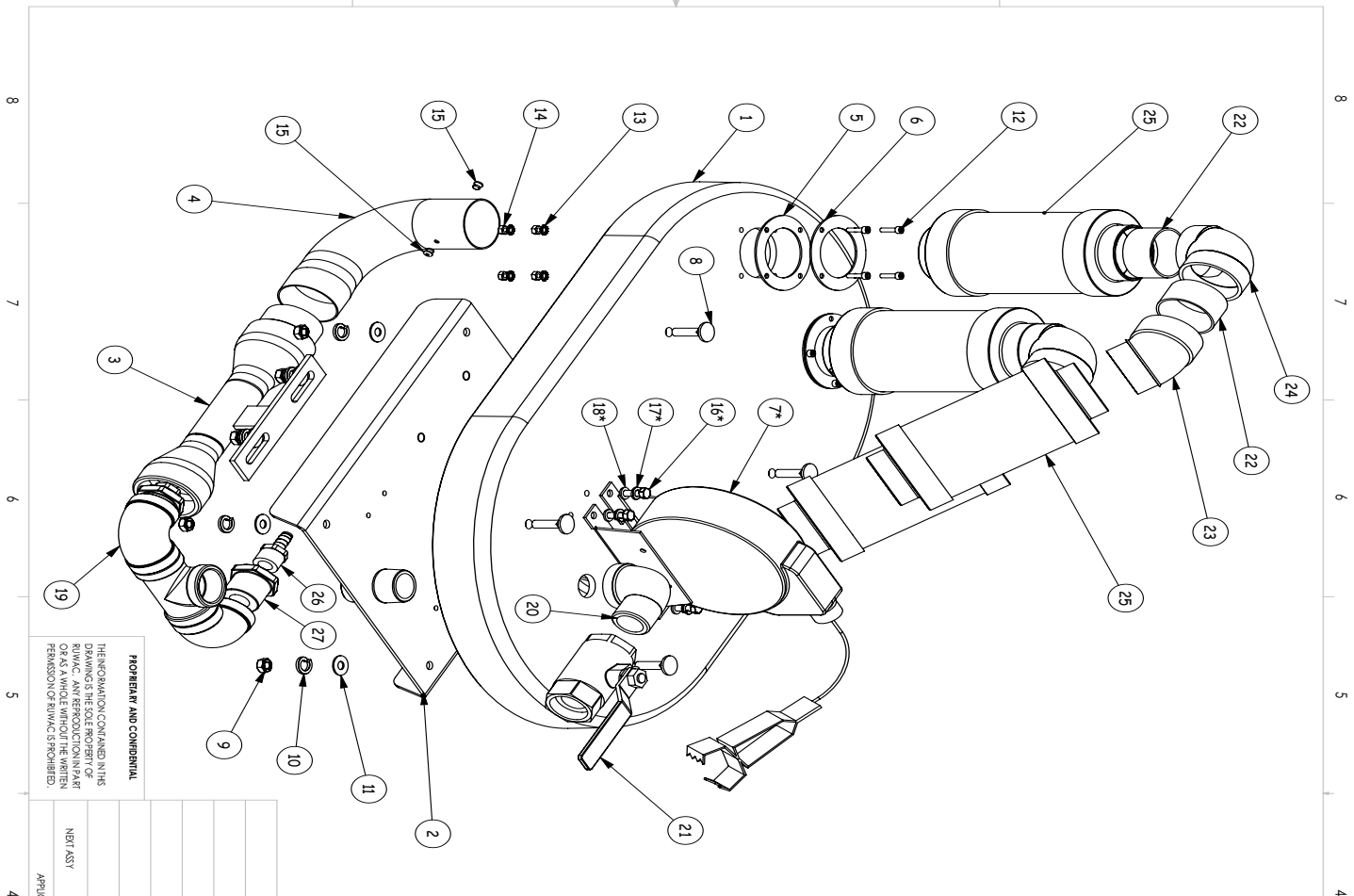
COMMENTS:

Q.A.

SIZE: DWG. NO. **B**
 000 E 0056 US
 SCALE: 1:4 WEIGHT: SHEET 1 OF 1

AV2000
MOTOR DECK ASSEMBLY

54 WINTER ST.
 Holyoke, MA 01040



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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90228-2	AV2000 Deck	1
2	31810	Venturi Plate, AV2000	1
3	31663	VENTURI	2
4	901835	90deg EL, 2" Custom SS For AV	2
5	34870	Inlet Gasket, 50mm	2
6	2000605	50mm Inlet Ring SS	2
7*	34878	Grounding Reel, Static Control, Automatic Spring Rewind	1
8	25030	Carriage Bolt, M8x30	4
9	20044	M8 Hex Nut, Zinc	8
10	20050	M8 Split Lock Washer, Zinc	8
11	25061	M8 Flat Washer, Zinc	8
12	32868	M8x16 Socket Head Cap Screw	8
13	32867	M8 Ext Tooth Lock Washer, Zinc	8
14	32873	M5 Hex Nut, Zinc	8
15	3299001	Rivet, Blind, 1/4" Long x 5/32"	4
16*	32903	M6x20 Hex Cap Screw, Zinc	4
17*	20039	M6 Split Lock Washer, Zinc	4
18*	25067	M6 Flat Washer	4
19	3165254	Dual Venturi Tee Assembly, Stainless Steel	1
20	349165	Elbow, 1" NPT x 90Deg Street, Stainless Steel	1
21	316255	Ball Valve, 1" Full Port Stainless Steel	1
22	-	2" PVC Tube, 1 1/2" Long Section	4
23	CY701588	45 Street Elbow, One Exp, 2" PVC	2
24	CY701585	90 Elbow, 2" PVC	2
25	CY802350	PVC Silencer, 6"	4
26	31623	Hose Barb, 1/2" NPT x 3/8" Barb	2
27	316505	Reducing Bushing, Stainless Steel, 1" NPT x 1/2" NPT, Hex	2



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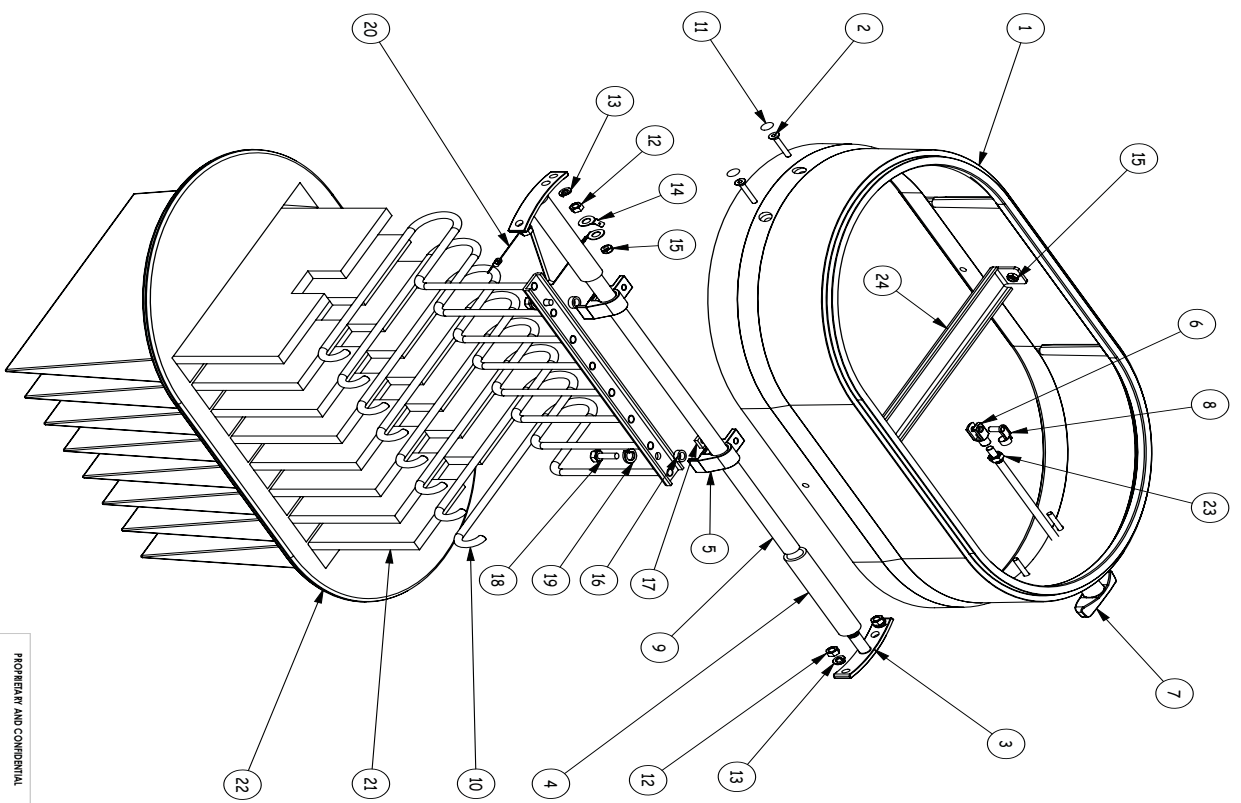
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REV.	DESCRIPTION	DATE	NAME
A	E.C.O. # 669	4/29/09	D.J.S.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	32834	Housing Spacer, Small, Black	1
2	34815	M6x30 Socket Cap Screw	4
3	34806	Shaker Rod Mounting Support	2
4	34805	Clear Hose, 3/4" I.D.	2
5	34802	Filter Slide	2
6	25047	Steel Yoke End Filter Shaker	1
7	22565	Shaker Bar with Swivel Handle	1
8	34879	Spring Clip, 6x12	1
9	3480455	Slide Bar, Stainless Steel	1
10	25056	Filter Cage, 12m	1
11	34871	Plastic Plug, 4.5/13	4
12	20040	M6 Hex Nut, Zinc	4
13	20039	M6 Split Lock Washer, Zinc	4
14	34998	Ground Connector, Bolted For Quick Disconnect	2
15	34876	M6 Lock Nut, Zinc	3
16	200656	Spacer, Filter Cage	2
17	20045	M8 Hex Nut, Four Corner, Zinc	2
18	25038	M8x20 Hex Cap, Zinc	2
19	20050	M8 Split Lock Washer, Zinc	2
20	34868	Ground, Filter to Deflector, 12m	1
21	20091F	Filter Insert, 12m	8
22	20093	Filter, 12m, 13 sq/ft, Static Conductive	1
23	20044	M8 Hex Nut, Zinc	1
24	30095	Filter Bar Support, D1 Series	1



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UNLESS OTHERWISE SPECIFIED:	DATE	NAME
DIMENSIONS ARE IN INCHES	3/12/09	D.J.S.
TOLERANCES		
FRACTIONAL ± 1/16"		
DECIMAL ± 0.005"		
ANGULAR MATCH ± 0.5°		
TWO PLACE DECIMAL ± 0.05		
THREE PLACE DECIMAL ± 0.001		
BREAK SHARP EDGES		
MATERIAL		
FINISH		
APPLICATION		
NEUT FAST		

54 WINTER ST.
Holyoke, MA 01040

RUWAC

TITLE:
FILTER ASSEMBLY FOR 12m FILTER DS1-EX

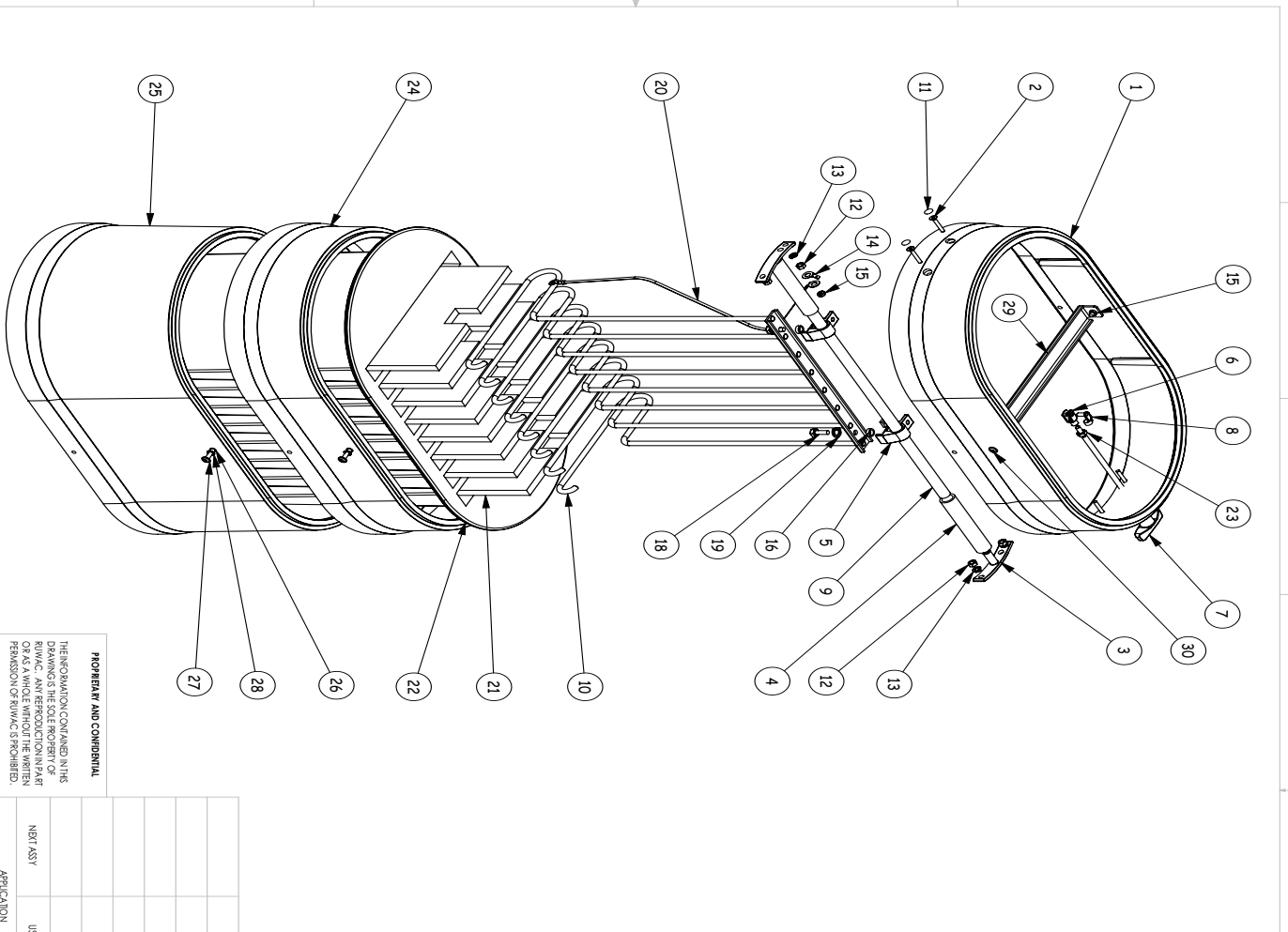
Q.A.

COMMENTS:

SIZE DWG. NO.
B 000 E 0217 US

SCALE: 1:5 **WEIGHT:** **A** **SHEET 1 OF 1**

REV.	DESCRIPTION	DATE	NAME
A	E.C.O. #669	4/30/09	D.J.S.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	32834	Housing Spacer, Small, Black	1
2	34815	M6x30 Socket Cap Screw	4
3	34806	Shaker Rod Mounting Support	2
4	34805	Clean Hose, 3/4" I.D.	2
5	34802	Filter Slide	2
6	25047	Steel Yoke End, Filter Shaker	1
7	22565	Shaker Bar with Swivel Handle	1
8	34879	Spring Clip, 6x12	1
9	34804SS	Slide Bar, Stainless Steel	1
10	34807	Filter Shaker Insert, 2.6m	1
11	34871	Plastic Plug, 4.5/13	4
12	20040	M6 Hex Nut, Zinc	4
13	20039	M6 Split Lock Washer, Zinc	4
14	34998	Ground Connector, Bolted for Quick Disconnect	2
15	34876	M6 Lock Nut, Zinc	3
16	200656	Spacer, Filter Gage	2
17	20045	M8 Hex Nut, Four Corner, Zinc	2
18	25038	M8x20 Hex Cap, Zinc	2
19	20050	M8 Split Lock Washer, Zinc	2
20	34869	Ground, Filter to Deflector, 2.6m	1
21	30091F	FILTER INSERT, 2.6m	8
22	30093	Filter, 2.6m, Static Conductive	1
23	20044	M8 Hex Nut, Zinc	1
24	32834	Housing Spacer, Small, Black	1
25	32835	Large Housing Spacer, Black	1
26	34817A	M6 Blind Pin	4
27	3481701	M6x25 Allen Head Screw	4
28	25000	1/4" External Star Washer	4
29	30095	Filter Bar Support, D1 Series	1
30	34817	M6x20 Allen Head Screw	2

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 FRACTIONAL 1/16"
 ANGULAR MACH 30° BRND 30°
 TWO PLACE DECIMAL ± .05
 THREE PLACE DECIMAL ± .000

BREAK SHARP EDGES

MATERIAL: ---
 FINISH: ---

APPLICATOR: USED ON: PART ASSY:

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54 WINTER ST.
 HOLYOKE, MA 01040

DATE: 3/12/09
 DRAWN: D.J.S.
 CHECKED: ENG APPR.
 Q.A.:

SIZE: B
 DWG. NO.: 000 E 0218 US
 SCALE: 1:17 WEIGHT: SHEET 1 OF 1



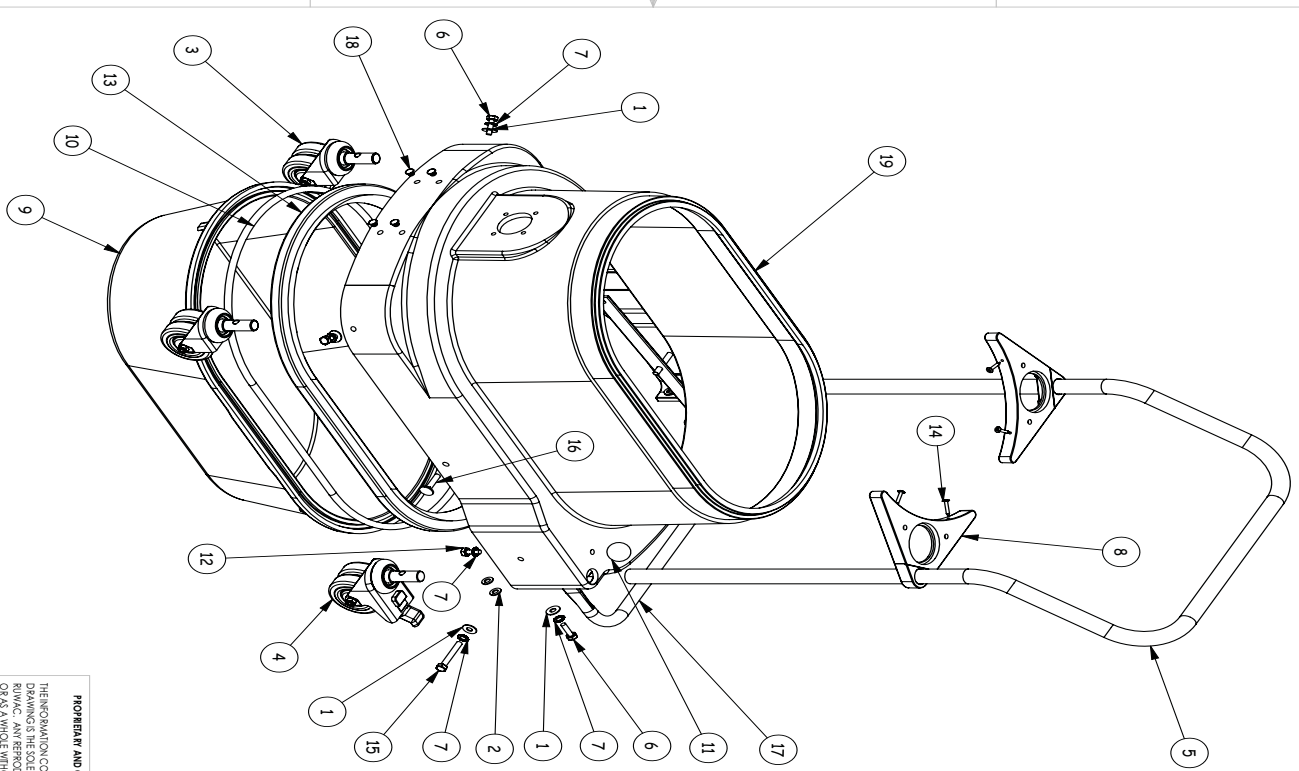
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REV.	DESCRIPTION	DATE	NAME
A	E.C.O. # 683	6/11/09	D.J.S.



ITEM NO.	PART NO.	DESCRIPTION	BASE ASM./QTY.
1	34982	M8 Thin Flat Washer, 8.4x20x1.3	8
2	25061	M8 Flat Washer	4
3	25117	Caster, Swivel, 75mm, Anti-Static	2
4	251180	Caster, Fixed, 75mm, Anti-Static	2
5	250980	Push Handle, D1 W2	1
6	25054	M8x25 Hex Bolt, Zinc	4
7	25037	M8 External Washer, Zinc	7
8	32039	Handle Support, Plastic	2
9	32837	Dust Pan, 35 Liter	1
10	2509865	Gasket, Round, 10mm Dia. x 68.5" Long	1
11	25060	Knob, Black, 8mm	1
12	25038	M8x20 Hex Cap, Zinc	1
13	20070	Gasket, Dust Pan/Lower Housing, Profile	1
14	32988	#8-1 Phillips Truss Head, Zinc	4
15	34811	M8x55 Hex Head Bolt	2
16	25053	Carriage Bolt, M8x35	2
17	200104	Dust Pan Lever Assembly	1
18	22120	Plug, 8mm, Black	4
19	34808	Series 1 Base, Black	1

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL: 1/16"
 ANGULAR: MACH: ±30° BRID: ±30°
 TWO PLACE DECIMAL: ±.05
 THREE PLACE DECIMAL: ±.030
 Q.A.
 COMMENTS:
 BREAK SHARP EDGES
 MATERIAL: --
 FINISH: --
 USED ON: --
 MFG. ASSY: --
 APPLICATION: --

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 Holyoke, Ma. 01040

TITLE:
D51-EX BASE ASM,
D51-EX 1000-1220

DATE: 3/12/09
 DRAWN: D.J.S.
 CHECKED: --
 ENG. APPR.: --
 MFG. APPR.: --

SIZE: B
 DWG. NO.: 000 E 0219 US
 SCALE: 1:17 WEIGHT: --
 SHEET 1 OF 2



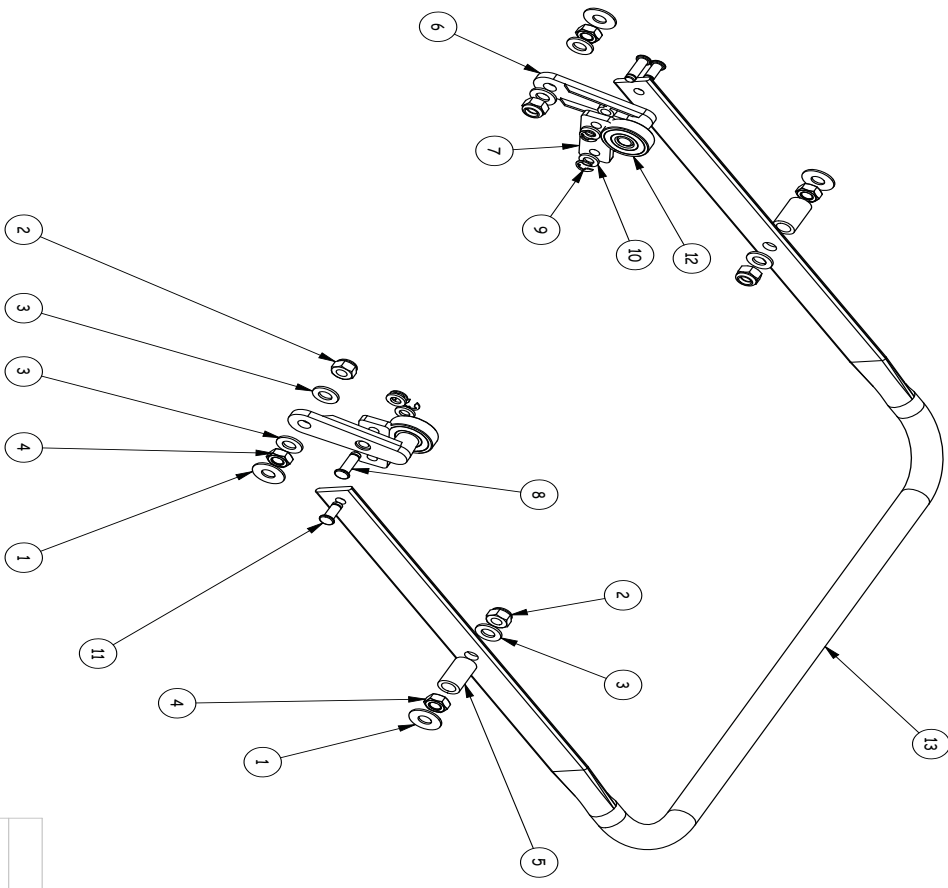
Ruwac Industrial Vacuums
 54 Winter Street
 Holyoke, MA 01040

Tel: (413) 532-4030
 Fax: (413) 532-4039
 www.ruwac.com

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REV.	DESCRIPTION	DATE	NAME
A	E.C.O. # 683	6/11/09	D.J.S.



ITEM NO.	PART NO.	DESCRIPTION	LEVER ASM/ QTY.
1	34882	M8 Thin Flat Washer, 8.4x20x1.3	4
2	30029	M8 Lock Nut, Zinc	4
3	25061	M8 Flat Washer	6
4	20044	M8 Hex Nut, Zinc	4
5	34812	PVC Spacer 15/16" Long	2
6	34852	Dust Pan Tension Lever	2
7	20027	Flat steel Pivot, 20x5x45mm	2
8	34922	Pin, D6x19mm	2
9	34923	C Spring Clip, Zinc	4
10	25067	M6 Flat Washer	4
11	34921	Pin, D6x15	2
12	34853	Dust Pan Lever Bearing	2
13	20010	Dust Pan Lever	1

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL: ± 1/16"

ANGULAR: MACH 30° BRID 30°

TWO PLACE DECIMAL: ± .05

THREE PLACE DECIMAL: ± .000

Q.A.

COMMENTS:

BREAK SHARP EDGES

MATERIAL: --

FINISH: --

APPLICATOR: USED ON: FINISH:

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SIZE DWG. NO. **B** 000 E 0219 US

SCALE: 1:1 WEIGHT: SHEET 2 OF 2

54 Winter St
Ruwac
 Holyoke, MA 01040

TITLE:
 DUST PAN LEVER ASM



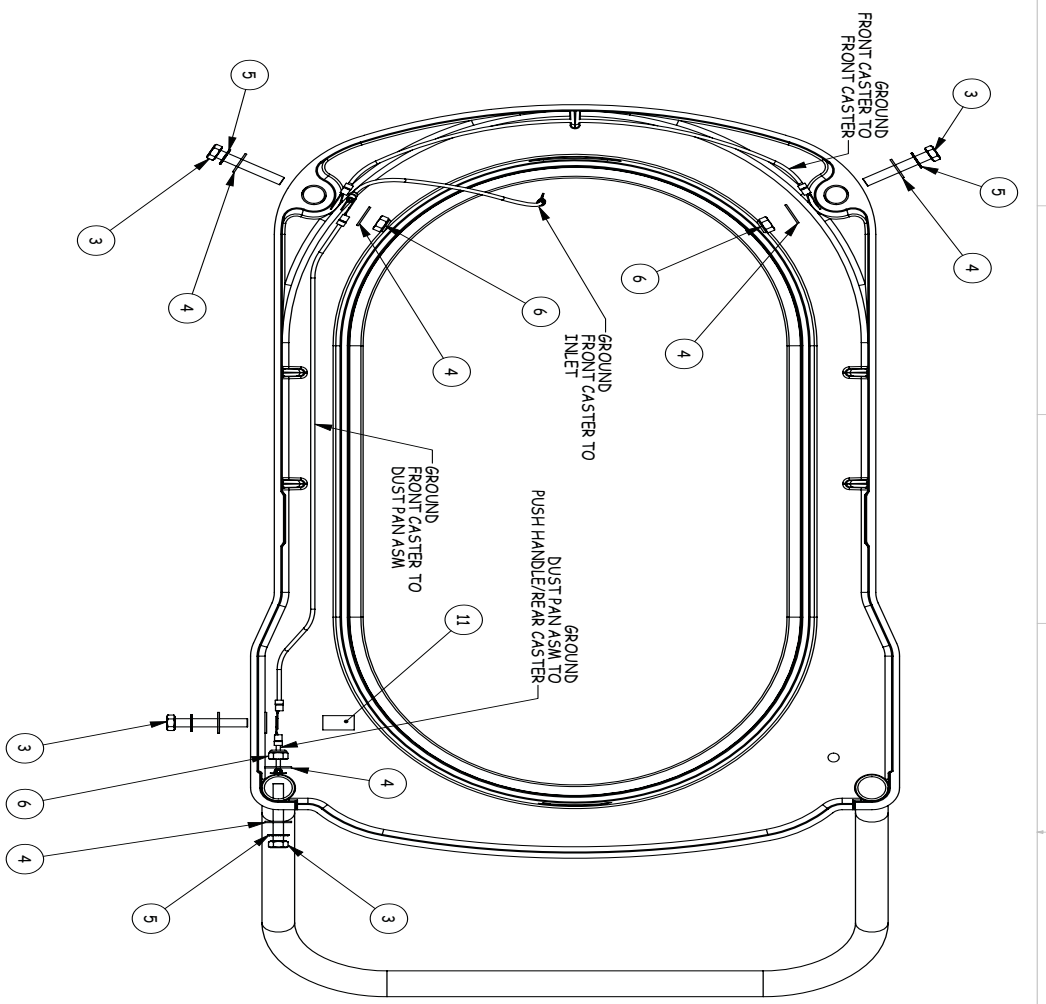
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 Holyoke, MA 01040

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 www.ruwac.com

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REV.	DESCRIPTION	DATE	NAME



ITEM NO.	PART #	DESCRIPTION	Default/Qty
1	34808	Series 1 Base, Black	1
2	25080	Push Handle, D1, W2	1
3	34811	M8x55 Hex Head Bolt	4
4	34882	M8 Thin Flat Washer, 8.4x20x1.3	8
5	25037	M8 External Washer, Zinc	4
6	30029	M8 Lock Nut, Zinc	3
7	34861	Ground Connection, Front Caster to Front Caster, DSI-EX	1
8	34875	Ground Wire, Inlet to Front Caster, DSI-EX	1
9	34863	Ground Wire, Caster to Foot Lever, DSI-EX	1
10	34860	Ground Wire, Foot Lever to Handle, DSI-EX	1
11	34812	PVC Spacer 15/16" Long	1

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES	DATE	NAME
TOLERANCES	2/6/09	D.J.S.
DECIMAL: ±.015"		
ANGULAR: MACH: ±30° BOND: ±30°		
TWO PLACE DECIMAL: ±.05		
THREE PLACE DECIMAL: ±.030		

Q.A.

COMMENTS:

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MATERIAL	USE	FINISH
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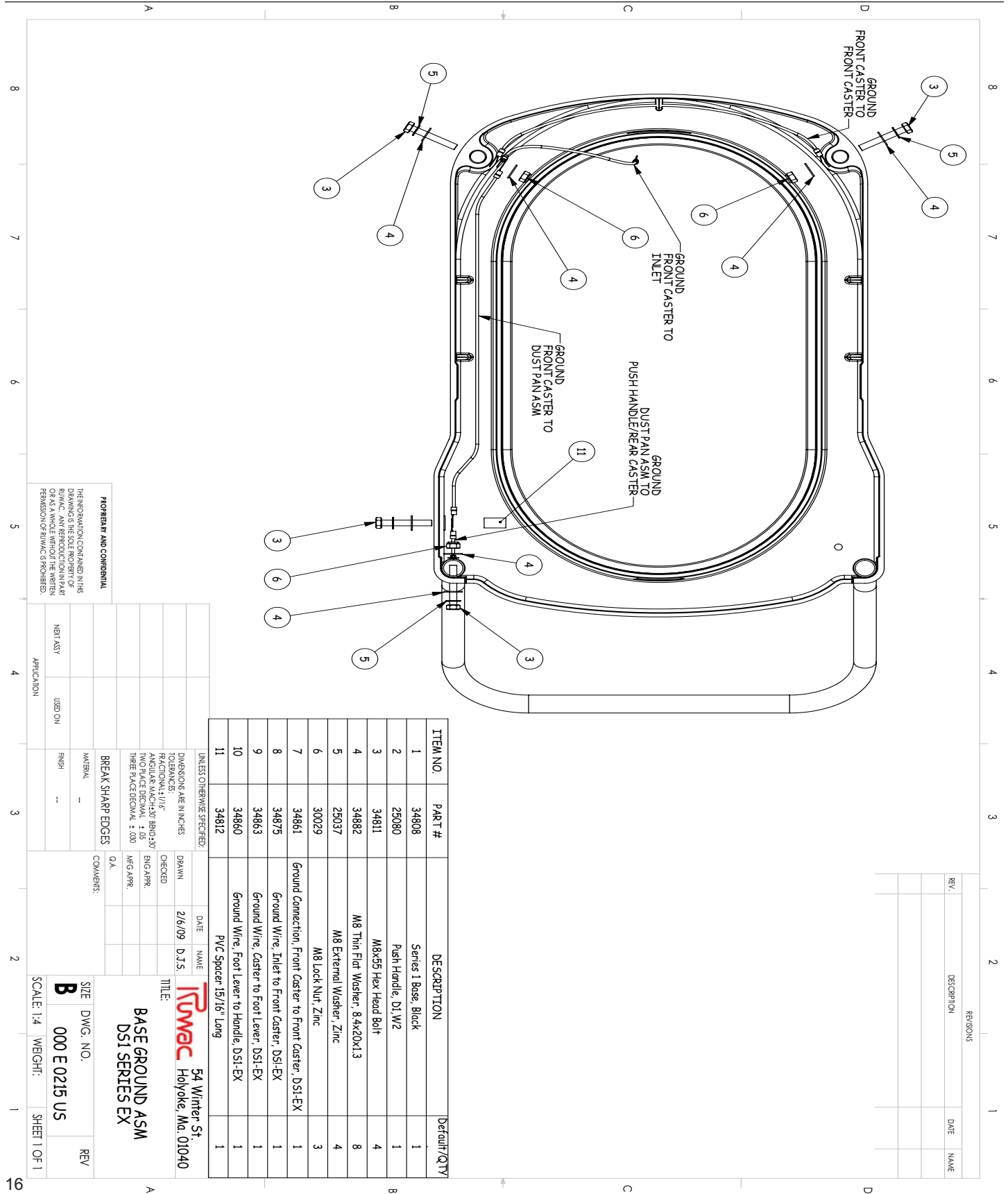
APPLICATOR

SIZE DWG. NO. **B** 000 E 0215 US

SCALE: 1:4 WEIGHT: SHEET 1 OF 1

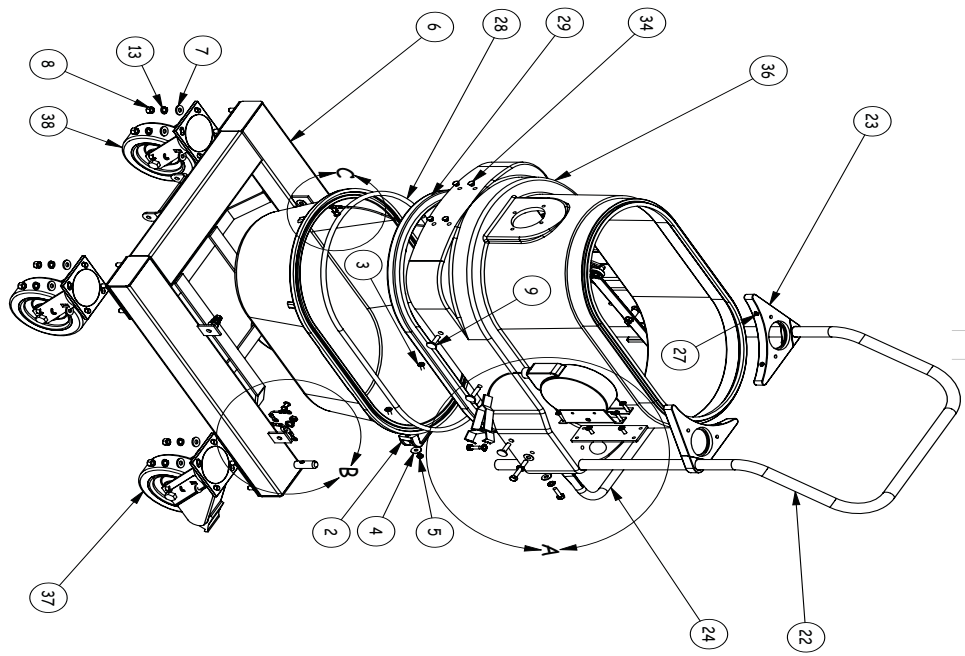
Ruwac 54 Winter St
Holyoke, Ma. 01040

TITLE:
**BASE GROUND ASM
DSI SERIES EX**



REV.	DESCRIPTION	DATE	NAME
A	E.C.O. # 634, CHANGED GROUND WIRES	3/12/09	D.J.S.
B	E.C.O. # 662	6/22/09	D.J.S.

ITEM NO.	PART #	DESCRIPTION	Default/Qty
1	32837	Dust Pan, 35 Liter, Black	1
2	21658-28	Handle, Black	1
3	21464	M6x30 Allen Head Screw	2
4	34819	M6 Fender Washer	2
5	34876	M6 Lock Nut, Zinc	2
6	302120A	Caster Frame, Series 1	1
7	31205	Flat Washer, 5/16", Zinc	16
8	37502	Hex Nut, 3/8"	16
9	25030	Carriage Bolt, M8x30	4
10	20044	M8 Hex Nut, Zinc	4
11	20050	M8 Split Lock Washer, Zinc	4
12	25061	M8 Flat Washer, Zinc	4
13	37501	Split Lock Washer, 3/8"	16
14	34859	Caster Frame Ground to Inlet, for EX Machines	1
15	34817	M6x20 Allen Head Screw	2
16	25000	1/4" External Star Washer	2
17	34860	Ground Wire, Footlever-Handle Bar/Footlever-Frame	2
18	25054	M8x25 Hex Bolt, Zinc	2
19	25037	M8 External Washer, Zinc	5
20	34882	M8 Thin Flat Washer, 8.4x20x1.3	4
21	31805	M1x40 Reinforcement Caster Peg	2
22	25080	Push Handle, D1 W2	1
23	32039	Handle Support, Plastic	2
24	20010A	Dust Pan Lever Assembly, D51	1
25	34811	M8x55 Hex Head Bolt	2
26	25053	Carriage Bolt, M8x35	2
27	32988	#8-1 Phillips Truss Head, Zinc	4
28	2509865	Gasket, Round, 10mm Dia. x 68.5" Long	1
29	20070	Gasket, Dust Pan/Lower Housing, Profile	1
30	25060	Knob, Black8mm	1
31	25038	M8x20 Hex Cap, Zinc	1
32	34878P	Grounding Reel Mounting Plate	1
33	3481701	M6x25 Allen Head Screw	6
34	22120	Plug, 8mm, Black	4
35	34878	Grounding Reel, Static Control, Automatic Spring Rewind	1
36	32836	Lower Housing, Black	1
37	30211	Caster, Rigid with Brake, 6"	2
38	30210	Caster Swivel, 6"	2



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UNLESS OTHERWISE SPECIFIED:		DATE	NAME
DIMENSIONS ARE IN INCHES	DRAWN	1/14/09	D.J.S.
FRACTIONAL 1/16"	CHECKED		
ANGULAR MACH 1/20° RND 1/8"	ENG APPR.		
TWO PLACE DECIMAL ± .05	MFG APPR.		
THREE PLACE DECIMAL ± .003	Q.A.		
BREAK SHARP EDGES	COMMENTS:		
MATERIAL			
FINISH			
USED ON			
APPLICATOR			

54 Winter St
Holyoke, MA 01040

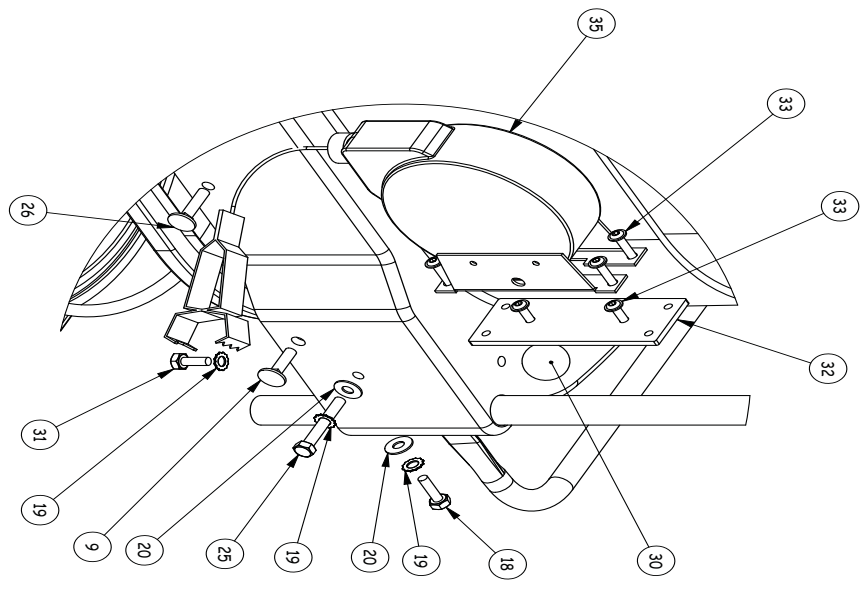
Ruwac

TITLE:
CASTER FRAME ASM

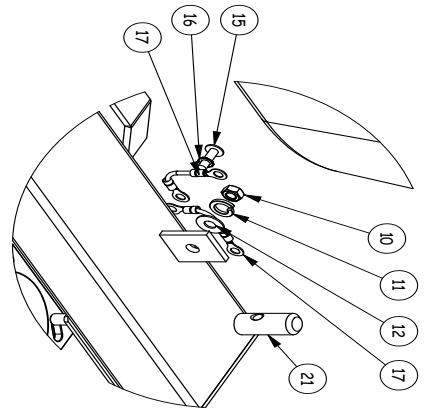
SIZE DWG. NO. **B** 000 E 0214 US REV **B**

SCALE: 1:10 WEIGHT: SHEET 1 OF 2

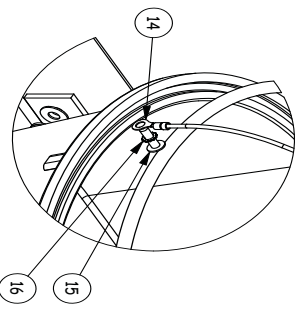
REV.	DESCRIPTION	DATE	NAME
A	E.C.O. # 634, CHANGED GROUND WIRES	3/12/09	D.J.S.
B	E.C.O. # 662	6/22/09	D.J.S.



DETAIL A
SCALE 2 : 7



DETAIL B
SCALE 2 : 7



DETAIL C
SCALE 2 : 7

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UNLESS OTHERWISE SPECIFIED:	DATE	NAME
DIMENSIONS ARE IN INCHES	1/14/09	D.J.S.
TOLERANCES		
FRACATIONAL ±.11/16		
ANGULAR MAX ±30° MIN 0.50°		
TWO PLACE DECIMAL ±.05		
THREE PLACE DECIMAL ±.020		
BREAK SHARP EDGES	Q.A.	
MATERIAL	COMMENTS:	

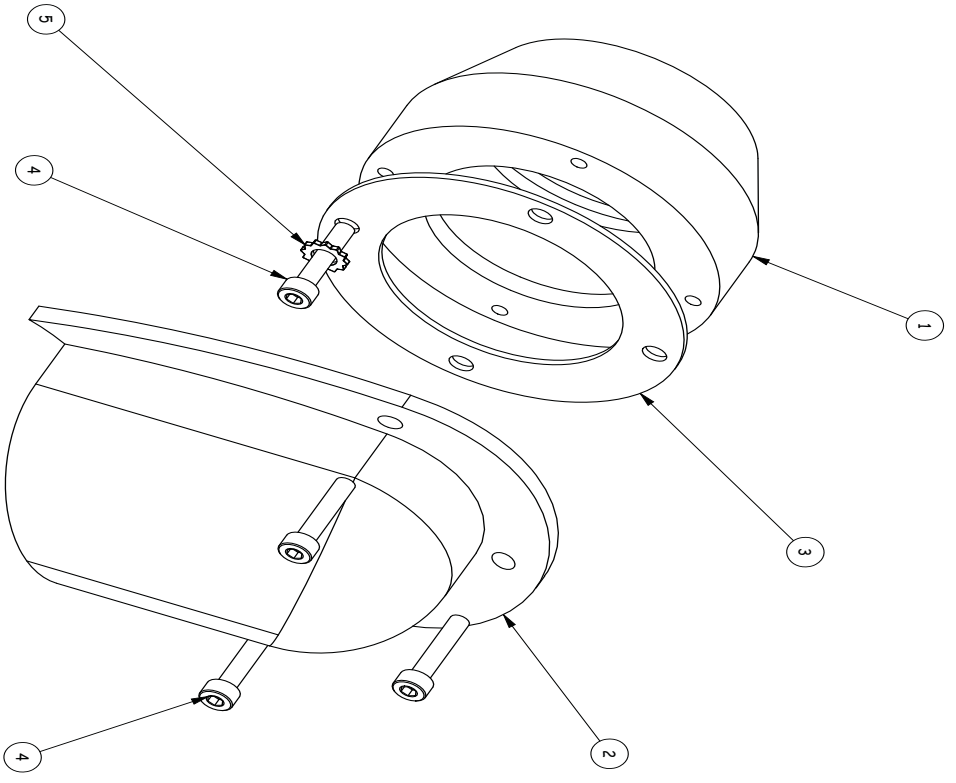
NEXT ASST		
USED ON		
FINISH		

APPLICATION		

54 Winter St
Holyoke, MA 01040
RUWAC
CASTER FRAME ASM

SIZE DWG. NO. REV
B 000 E 0214 US **B**
 SCALE: 2:7 WEIGHT: SHEET 2 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	NAME
B	E.C.O. # 453	12/6/06	D.J.S.
C	E.C.O. # 688	6/22/09	D.J.S.



ITEM NO.	PART #	DESCRIPTION	PH2000646E/QTY.
1	20006	Inlet, 50mm, Aluminum	1
2	20061	Deflector, 50mm, Bronze, DS1/W/S	1
3	34870	Inlet Gasket, 50mm	1
4	25057	M4x20 Socket Cap Screw	4
5	32867	M5 Ext Tooth Lock Washer, Zinc	1

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES
 FRACTIONAL ±.111"
 ANGULAR MACH±.50° BRND±.30°
 TWO PLACE DECIMAL ±.05
 THREE PLACE DECIMAL ±.030

CHECKED: [Signature] DATE: 6/22/09
 DRAWN: D.J.S.
 ENG APPR: [Signature]
 MFG APPR: [Signature]

Q.A.
 COMMENTS:
 BREAK SHARP EDGES

MATERIAL: ..
 FINISH: ..

USE: ON
 MFG PART: ..

PH2000646E

50mm EX INLET ASSEMBLY

54 Winter St
 Holyoke, MA 01040

SIZE: B DWG. NO.: 000 E 0111 US
 SCALE: 1:1 WEIGHT: SHEET 1 OF 1

REV: C

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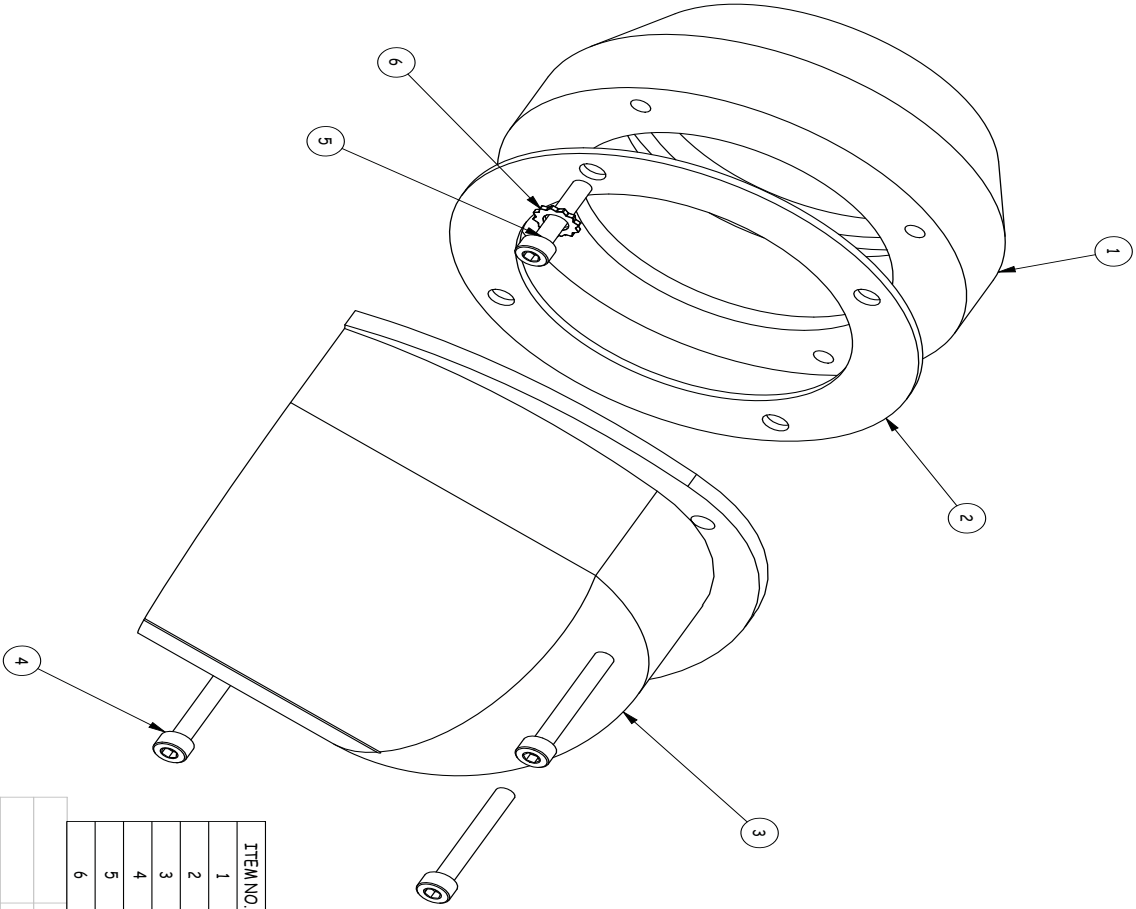
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REV.	DESCRIPTION	DATE	NAME
C	E.C.O # 635	3/13/09	D.J.S.
D	E.C.O.# 687	6/22/09	D.J.S.



ITEM NO.	PART #	DESCRIPTION	PH30007AGE/QTY.
1	30007	Inlet, 70mm, Aluminum	1
2	34821	Gasket, 70mm Inlet	1
3	32963	Deflector, 70mm, Bronze, DS1/W5	1
4	32866	M5x30 Socket Head Cap Screw	3
5	32863	M5x20 Socket Head Cap Screw	1
6	32867	M5 Ext Tooth Lock Washer, Zinc	1

UNLESS OTHERWISE SPECIFIED:	
DIMENSIONS ARE IN INCHES	DATE
FRACTIONAL: 1/16"	DRAWN
ANGULAR: MACH 50° BRND 130°	6/22/09
TWO PLACE DECIMAL: .05	D.J.S.
THREE PLACE DECIMAL: .000	
MFG APPR.	
Q.A.	
COMMENTS:	
BREAK SHARP EDGES	
MATERIAL	
FINISH	
USED ON	
APPLICATION	

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PH30007AGE
 SCALE: 1:1
 SHEET 1 OF 1

70mm EX INLET ASSEMBLY
 54 Winter St
 Holyoke, MA 01040

Notes:



Ruwac Industrial Vacuums
54 Winter Street
Holyoke, MA 01040

Tel: (413) 532-4030
Fax: (413) 532-4039
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TERMS & CONDITIONS

ACCEPTANCE: The terms and conditions of sale set forth herein apply to any order accepted or acknowledged by RUWAC, Inc. Buyer's acceptance of RUWAC'S proposal or delivery of all or any part of the goods covered hereunder constitutes acceptance of the terms and conditions of sale contained herein, and RUWAC hereby rejects any additions to or modification to these terms and conditions. Any representations, promises, warranties, or statements by RUWAC or its agents that differ in anyway from these terms and conditions shall be given no force or effect. No contract is final until accepted in writing by RUWAC at its corporate office in Holyoke, Massachusetts.

PRICES: Prices quoted orally expire the same day they are made unless accepted in writing on that day or confirmed by written communication by RUWAC. Written price quotations are guaranteed for thirty (30) days after the date issued, but may be terminated by written notice within that period. After thirty (30) days, any written price quotations are subject to adjustment to reflect prices in effect at the time of shipment, including any changes in packing, storage, or shipping charges. This order or proposal includes only the equipment specified herein, and does not include freight or installation of RUWAC equipment. All prices are F.O.B. RUWAC'S plant in Holyoke, Massachusetts and are exclusive of all taxes, levies, and duties that may be assessed in connection with the sale or delivery of goods, and Buyer shall be responsible for all such taxes, levies, and duties. In the event RUWAC pays any such tax, levy, or duty, Buyer shall promptly reimburse RUWAC therefore. Any packaging requirements other than RUWAC'S standard packaging and commercial container will be invoiced as an extra charge.

PAYMENT: Payment is due in full thirty (30) days after the date of invoice. All invoices paid after the due date will be assessed a late payment charge of one and half percent (1.5%) per month or any portion thereof, or the maximum amount allowed by applicable law, whichever is less. Buyer shall be responsible for all costs of collection, including reasonable legal fees. Sales on the foregoing terms are subject to the approval of RUWAC'S credit department and may be changed at any time at RUWAC'S sole discretion. If RUWAC has reasonable grounds with respect to Buyer's ability or willingness to make timely payments for the goods, RUWAC may at any time suspend performance, decline to ship, or require advance payment in cash or other adequate assurance satisfactory to RUWAC.

SHIPMENTS AND DELIVERY: RUWAC shall use its reasonable efforts to meet all shipment or delivery dates recited in RUWAC'S proposal or in Buyer's order but any such dates are estimated only and are not guaranteed. RUWAC shall have no liability to Buyer for damages or penalties, direct or indirect, for any delay in shipment or delivery, whether such delay is minor or substantial, nor shall Buyer have the right to declare a breach of contract because of any such delay. In any event, delivery schedules are based upon the effective date of the order and are subject to prompt receipt by RUWAC of all necessary down payments, information and instructions from Buyer, including any required approval of drawings. RUWAC shall have the right to make partial shipments, and invoiced covering the same shall be payment terms hereof. RUWAC will attempt to ship in accordance with Buyer's instructions, but RUWAC will make the final selection of a method of shipment and a carrier unless Buyer clearly and conspicuously specifies that shipment must be by a particular method of carrier. RUWAC is not responsible for damage or loss in transit, and all such claims must be by Buyer directly against the carrier.

CHANGE ORDERS: RUWAC shall not be obligated to make any changes in or additions to the scope of the work which are initiated by Buyer or result from circumstances beyond RUWAC'S control unless there is an equitable adjustment in price and or delivery.

CANCELLATION, SUSPENSION OR DELAY: In the event Buyer requests or causes a cancellation, suspension or delay in any RUWAC'S work under this proposal or order based thereon, Buyer shall indemnify and pay to RUWAC all appropriate charges, including but not limited to any costs, expenses, and commitments incurred by RUWAC up to the date of receipt of notice of such cancellation, suspension or delay, plus RUWAC'S overhead and reasonable profit. If shipment is delayed on account of Buyer, the purchase price shall be due and payable as if delivery had been made. Additionally, all charges related to storage, disposition and/or resumption of work, at RUWAC'S plant or elsewhere, shall be for Buyer's sole account and Buyer thereto shall assume all risks incidental.

CLAIMS: NOTICE OF DEFECTS: Buyer shall give written notice of rejection of any shipment or portion thereof within thirty (30) days after the date of shipment specifying the reasons therefore. Failure to give such notice shall be deemed a waiver of any right of rejection and any claim with respect thereto (except as to claims under the warranty) and shall be deemed an acceptance of such shipment. Buyer shall set aside and hold rejected goods without further processing until RUWAC has an opportunity to inspect and advise of the disposition, if any, to be made of such goods. In no event shall any rejected goods be returned reworked, or scrapped by Buyer without the express written authorization of RUWAC.

INSPECTION OF EQUIPMENT: RUWAC shall have the right to inspect, after prior notices, the equipment supplied by it when in operation. If Buyer requires, RUWAC shall execute an appropriate secrecy agreement.

CONFIDENTIALITY: All proposals, drawings, diagrams, specification, pricing, and other materials relating to the goods included are the property and confidential information of RUWAC. Buyer shall not disclose such material or information without the written approval of RUWAC.

BACK CHARGE: RUWAC will pay claims for expenses of Buyer relating to labor and/or material supplied by Buyer only if (a) RUWAC is advise in writing before such expenses are incurred (2) RUWAC gives Buyer its prior written consent to the supply of such labor and/or material by buyer.



LIMITED WARRANTY: RUWAC warrants that new equipment which are complete units and are sold and/or manufactured by RUWAC, Inc. will be free from defects in material and workmanship for a period of 18 months from date of shipment or 12 months from date of start-up, whichever comes first. RUWAC warrants that replacement parts sold hereunder will be free from defects in material and workmanship for a period of 120-days after the date of shipment. RUWAC machines that have been completely re-built at the factory will carry a 180-day warranty from date of shipment. All field repairs by authorized RUWAC service personnel are covered by a 120-day parts only warranty. RUWAC, Inc. will not assume any responsibility under the terms of this limited warranty on equipment, which have not been paid for in full. This warranty does not apply to any equipment that has been disassembled, repaired, or otherwise altered by any person without the written authorization of RUWAC'S service department, nor does it apply to any product that has been subject to failure due to corrosive or abrasive attack, misused, damaged, or improperly installed, nor does it apply to motors, controls, and components not manufactured by RUWAC, Inc. Motors, controls, and other Sub vendor's components therefore are warranted only to the extent of the manufacturer's warranty. All warranty work on such products must be authorized by RUWAC, Inc. and must be performed in an authorized shop as designated by the manufacturer. RUWAC sole liability and buyer's sole and exclusive remedy hereunder is the replacement or repair at RUWAC'S option of products not complying with this warranty. Such repair or replacement shall be F.O.B. RUWAC'S factory, and RUWAC reserves the right to invoice all expenses incurred when repairs are made in the field at the request of the customer, except as specifically set forth herein, RUWAC makes no warranty express or implied, with respect to the products and/or service supplied hereunder, this warranty is in lieu of and excludes all other warranties, including without limitation, any warranty of merchantability, fitness for a particular purpose, or conformance to purchaser's specifications.

LIMITATION OF LIABILITY: RUWAC'S responsibility with respect to the goods and RUWAC'S obligations related thereto should in no event exceed the purchase price of the goods. RUWAC shall not be liable to Buyer for any special incidental, indirect, or punitive damages for any reason whatsoever, including, but without limitation damages in the form of (a) loss of profits, revenues, or anticipated savings resulting from the failure of the equipment to meet specifications or warranties (b) damages suffered by Buyer as a result of loss of production facilities or equipment (c) cost of replacement equipment (d) damages suffered by customers of the Buyer (e) any fines or penalties assessed for failure to comply with any law or government regulations.

REPAIR OF GOODS EXPOSED TO HAZARDOUS, TOXIC, OR INFECTIOUS MATERIAL: Buyer shall ensure that any goods submitted by Buyer or any of its customers to RUWAC for repairs or other service have been decontaminated and cleaned (including sterilization, if appropriate) of any hazardous, toxic or infectious materials, including without limitation any materials listed by the Environmental Protection Agency, OSHA, or any applicable state law as deserving or requiring special treatment. Upon RUWAC'S request, Buyer or its customer shall certify in writing that such goods contain no such hazardous, toxic, or infectious materials, and that such decontamination has taken place in accordance with accepted parties and in accordance with all applicable laws and regulations. If special safety equipment is required to protect RUWAC'S service personnel from any such hazardous, toxic, or infectious materials during field service work or otherwise. Buyer shall ensure that such safety equipment is provided and that the personnel are properly instructed. The provision of this paragraph shall apply to all work to be performed by RUWAC'S service personnel at any time, whether or not covered by warranty. Buyer shall defend and indemnify RUWAC for any and all losses, liabilities, expenses, and damages (including attorneys' fees) arising out of any failure of buyer or its customer to comply fully with the terms of this paragraph.

BUYER SUPPLIED DATA: Buyer acknowledges that RUWAC has relied upon all specifications and other data supplied by Buyer to RUWAC in the selection and design of the equipment and the preparation of this proposal. In the event the site operating conditions differ from those represented by Buyer and relied upon by RUWAC, any warranties or performance guarantees contained herein affected by such conditions shall be null and void, unless otherwise mutually agreed upon in writing.

REMEDIES OF SELLER: In addition to any other remedies of RUWAC provided hereby or by law, in the event Buyer becomes bankrupt, insolvent, assigns assets for the benefit of creditors or its financial condition has substantially deteriorated, RUWAC may, at its sole option, declare a breach of contract, stop all work hereunder or demand payments in advance as security for its performance hereunder.

FACTIONS: GOVERNING LAW: Any dispute, controversy, or claim against RUWAC with respect to the goods or any of RUWAC'S obligations related thereto must be commenced within one year from the date of shipment. All contract between Buyer and RUWAC shall be governed by and construed in accordance with the laws of the state of Massachusetts except that body of laws controlling conflict of laws.

BONDS: In addition to the price specified herein, Buyer shall pay the cost of any bonds, which Buyer requires RUWAC to obtain.

ENTIRE AGREEMENT: These terms and conditions, together with the provisions of the proposal constitute the entire agreement between the parties pertaining to the goods, and they supersede any prior or contemporaneous agreements, representations, or understandings between the parties. No waiver or modification of these terms and conditions is binding unless such waiver or modification is set out in writing signed by an authorized manager or officer of RUWAC. RUWAC'S failure to strictly enforce any right on one occasion does not constitute a waiver of that or any on any other occasion.

