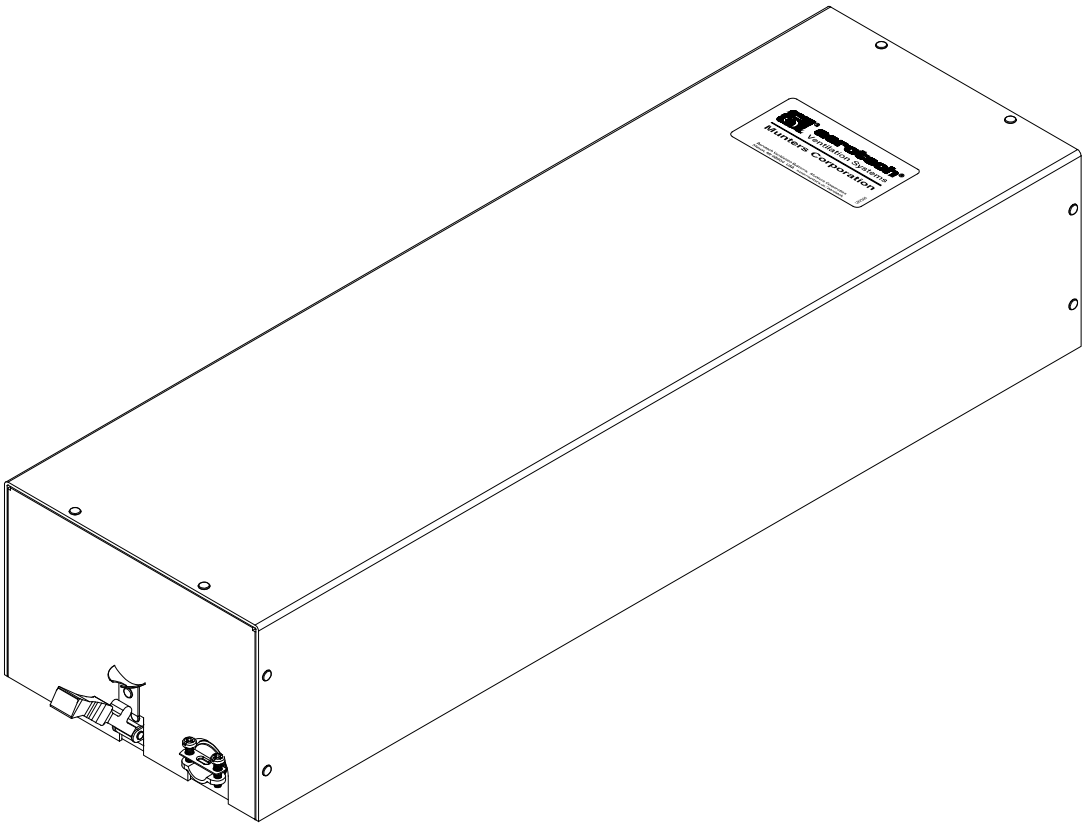
AEROTECH
BAFFLE ACTUATOR

BA1701 • BA1701PT



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FORM: QM1154
Rev. 4, September 2009

USER'S MANUAL and INSTALLATION GUIDE

TABLE OF CONTENTS

Section

THANK YOU

Thank you for purchasing an Aerotech Baffle Actuator. Aerotech equipment is designed to be the highest performing, highest quality equipment you can buy. With the proper installation and maintenance it will provide many years of service.

PLEASE NOTE

To achieve maximum performance and insure long life from your Aerotech product it is essential that it be ***installed and maintained properly.*** Please read all instructions carefully before beginning installation.

WARRANTY

For Warranty claims information see the "Warranty Claims and Return Policy" form QM1021 available from the Aerotech Ventilation System, Munters Corporation office at 1-800-227-2376 or by e-mail at aerotech@munters.com.

Conditions and Limitations:

- Products and Systems involved in a warranty claim under the “Warranty Claims and Return Policy” shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Aerotech Ventilation Systems, Munters Corporation.
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.

UNPACKING THE EQUIPMENT

Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to your freight carrier.

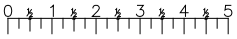
Each box includes:

1 - BA1701 or BA1701PT Baffle Actuator drive unit with internal brake

1 - Hardware Package as follows:

(HP1032) for Baffle Actuator

[A] ....4 - ¼" x 1.5" Lag Screw
[B] ....2 - 3⁄16" Cable Clamp
[C] ....4 - ¼" - 20 Hex Nuts, ZP
[D] ....1 - Cable Assembly, 60" Long with Threaded Ends
[E] ....1 - Thimble for ⅛" dia. cable, ZP
[F] ....4 - 4" Pulley with Carrier
[G] ....4 - 5⁄16" x 4.88" Open Eye Lag Screw
[H] ....2 - 5⁄16" x 9" Turnbuckle



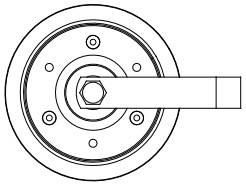
[A]

[B]

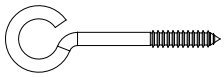
[C]

[E]

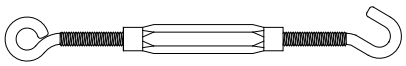
[F]

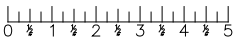


[G]

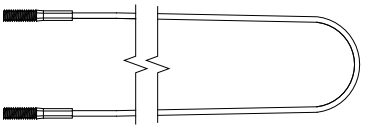


[H]





[D]

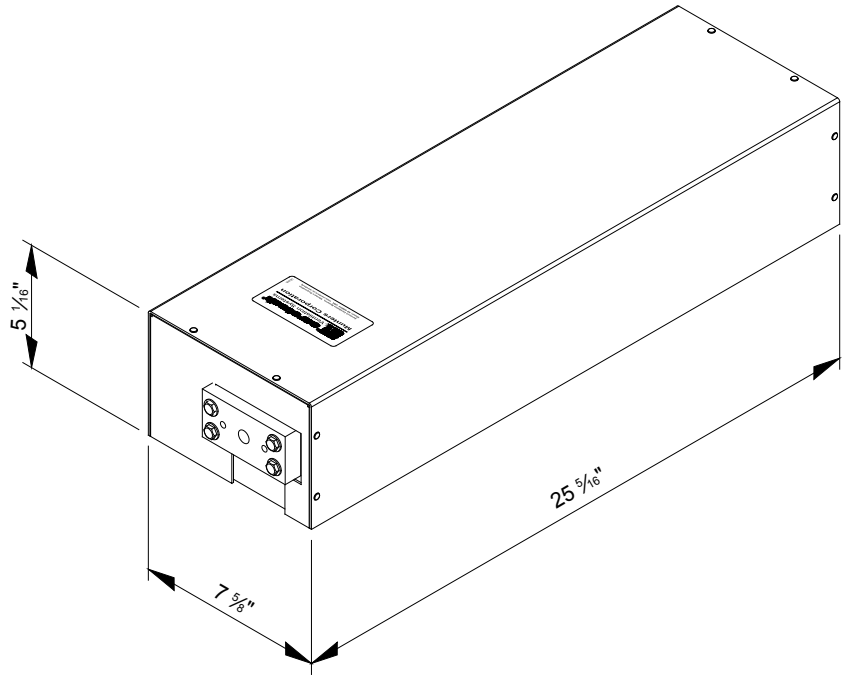


Actuator Specifications:

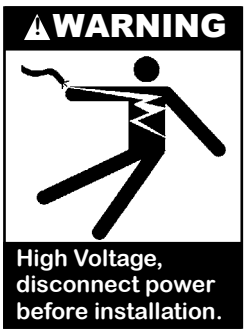
Power: 110-120 VAC
Amps: 0.5
Phase: 1 Hertz: 60
Load Capacity: 700 pounds

NOTE: These actuators open or close Aero-Baffle accordingly from signals received from any one of Aerotech's Air Monitor controls.

DIMENSIONS



INSTALLATION INSTRUCTIONS



Step 1

Install the actuator in the location shown on your ventilation system drawing or as shown in ***Figure 1A and 1B,*** using the (4) Fastener [A] supplied in the hardware pack. ***See Figure 2A*** for typical installation of a ceiling mounted actuator. ***See Figure 2B*** for typical installation of wall mounted actuator.

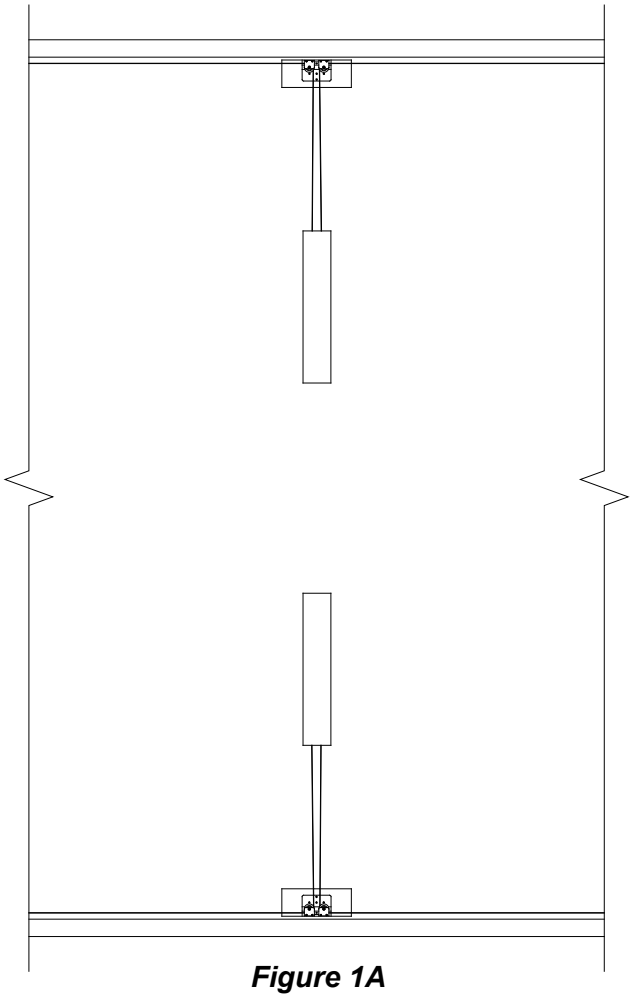


Figure 1A

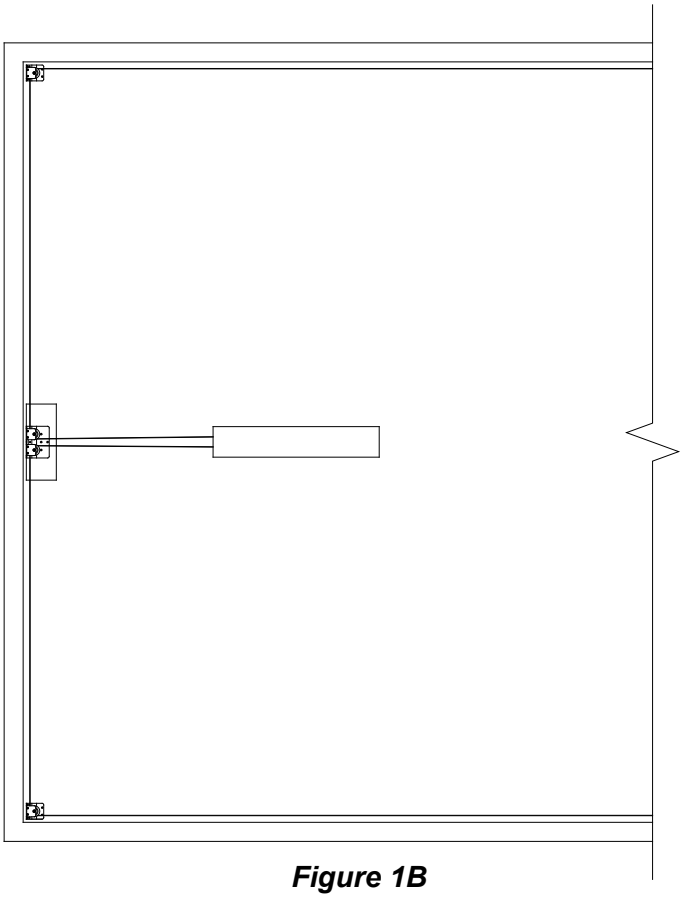
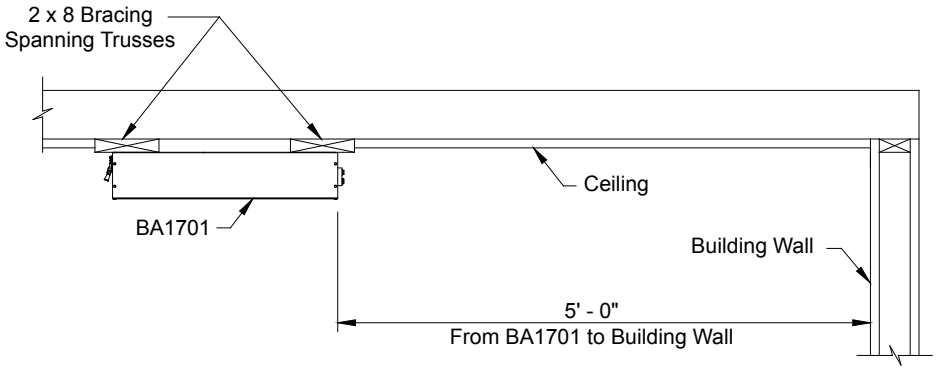


Figure 1B

Figure 2A
SIDE VIEW



LOOKING UP FROM FLOOR

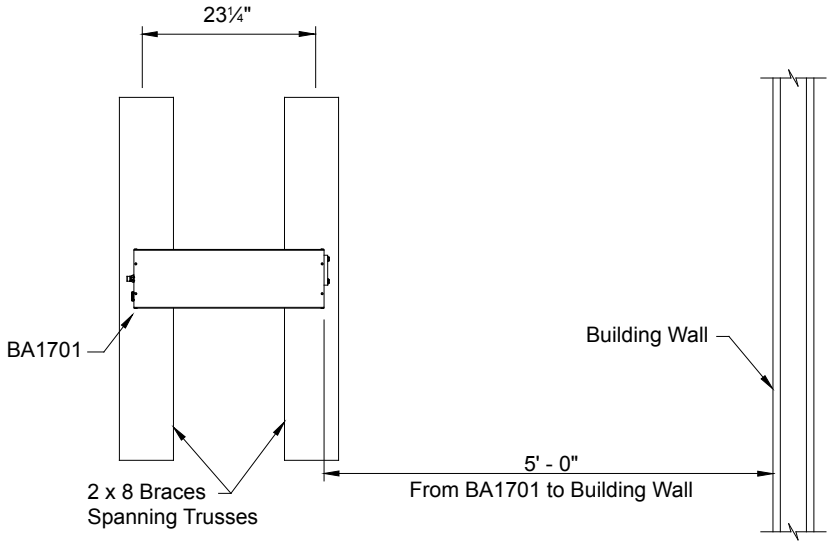
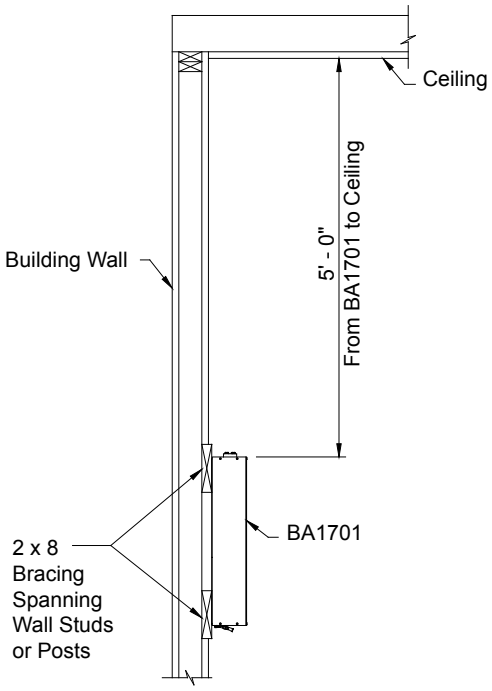
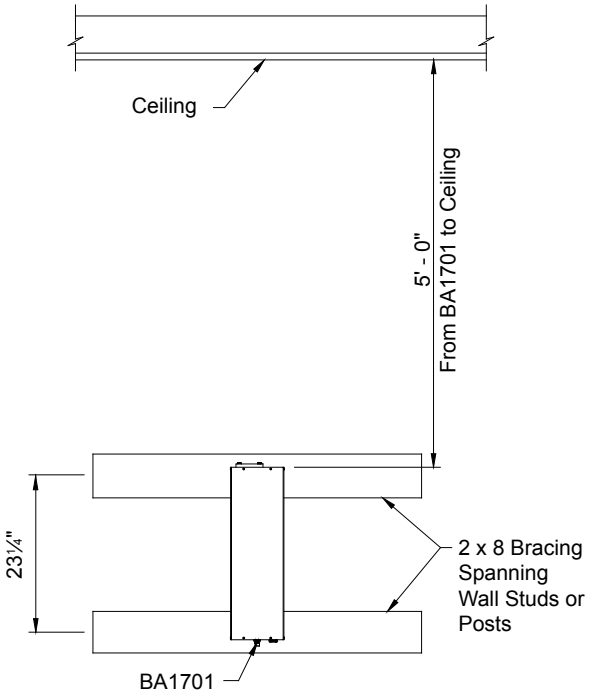


Figure 2B
SIDE VIEW



ELEVATION VIEW



Step 2

Fold Part [D] in a "U" shape and insert the 2 threaded ends through the holes in the nylon block on the end of the actuator. Pull the 2 threaded ends through and attach to the ball nut flange with (4)Fastener [C]. ***See Figure 3.***

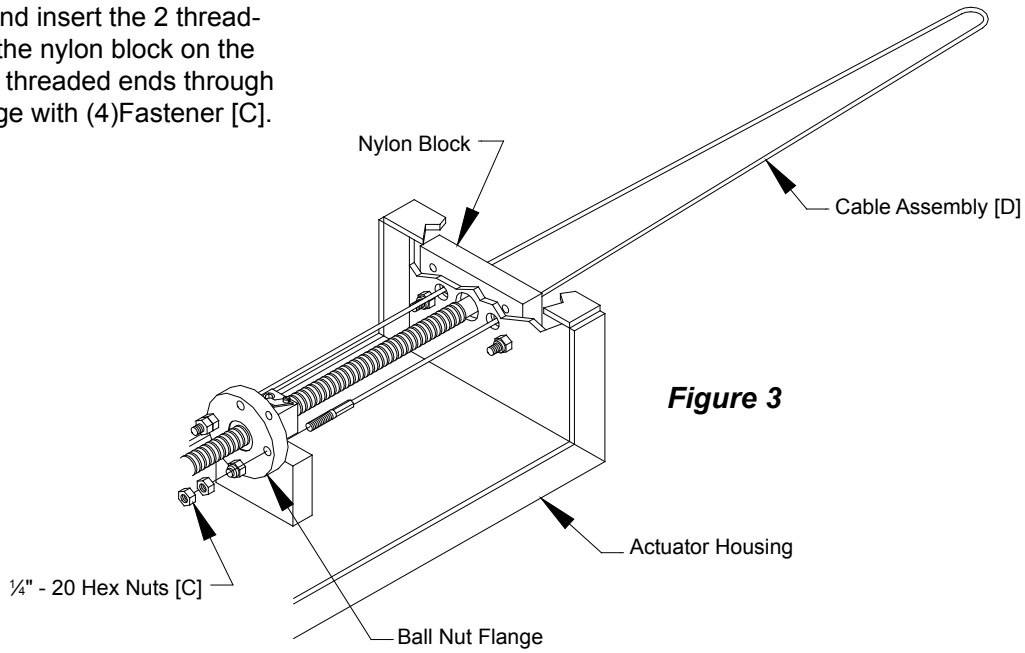


Figure 3

Step 3

Secure Fastener [G] to wall in direct line with BA1701. Then attach Part [F] to eye screws by sliding strap of pulley into eye of the open eye lag screw. ***See Figure 4.***

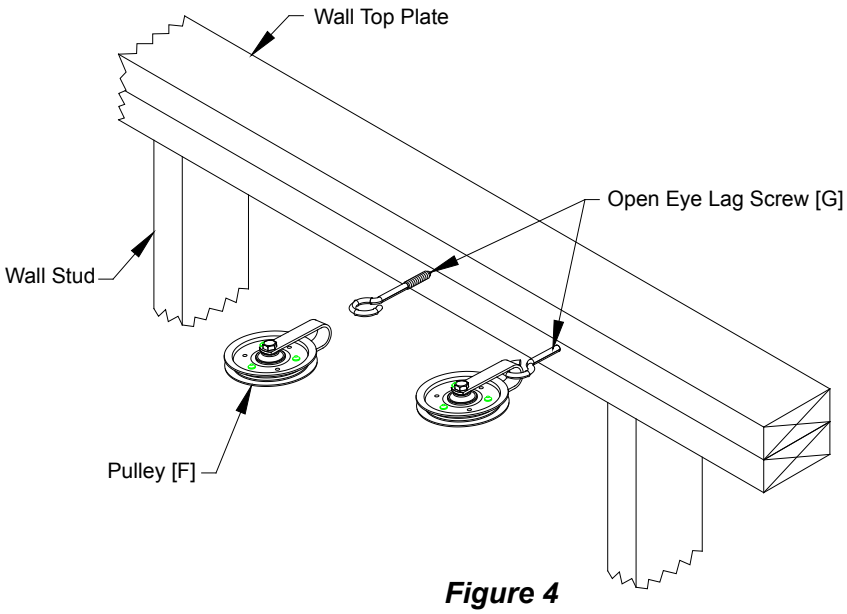


Figure 4

Step 4

Unthread both ends of Part [H] until they are 9" long, with an equal amount of threads showing at both ends. Pull the cables attached to the baffle, through the pulleys and loop the ends through the eye of the turnbuckles and secure with Part [B]. ***See Figure 5.***

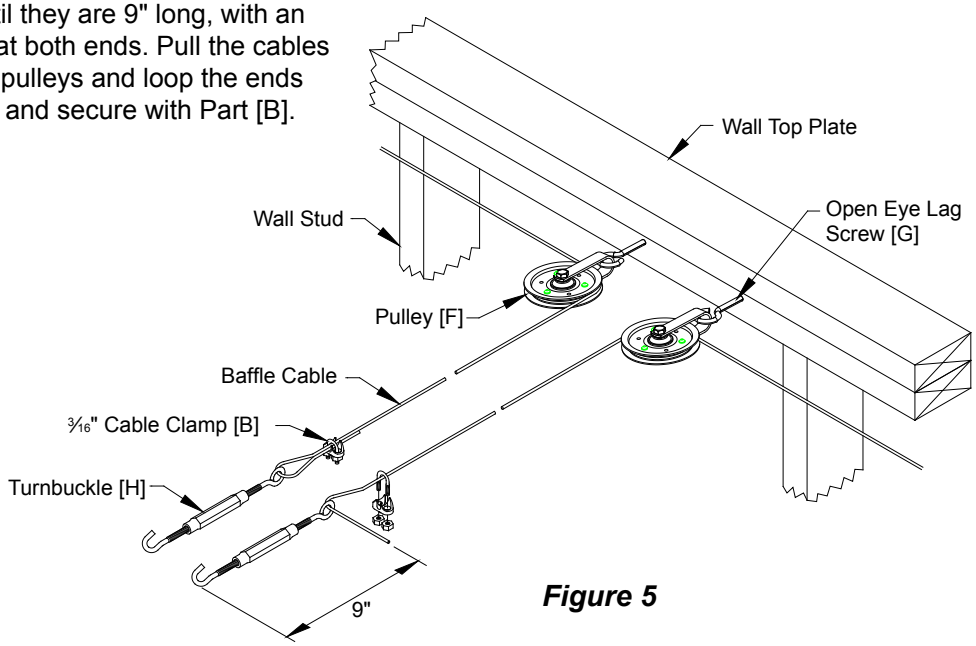


Figure 5

Step 5

Place Part [E] over hook end of turnbuckles. Then place Part [D] in groove of Part [E]. ***See Figure 6.***

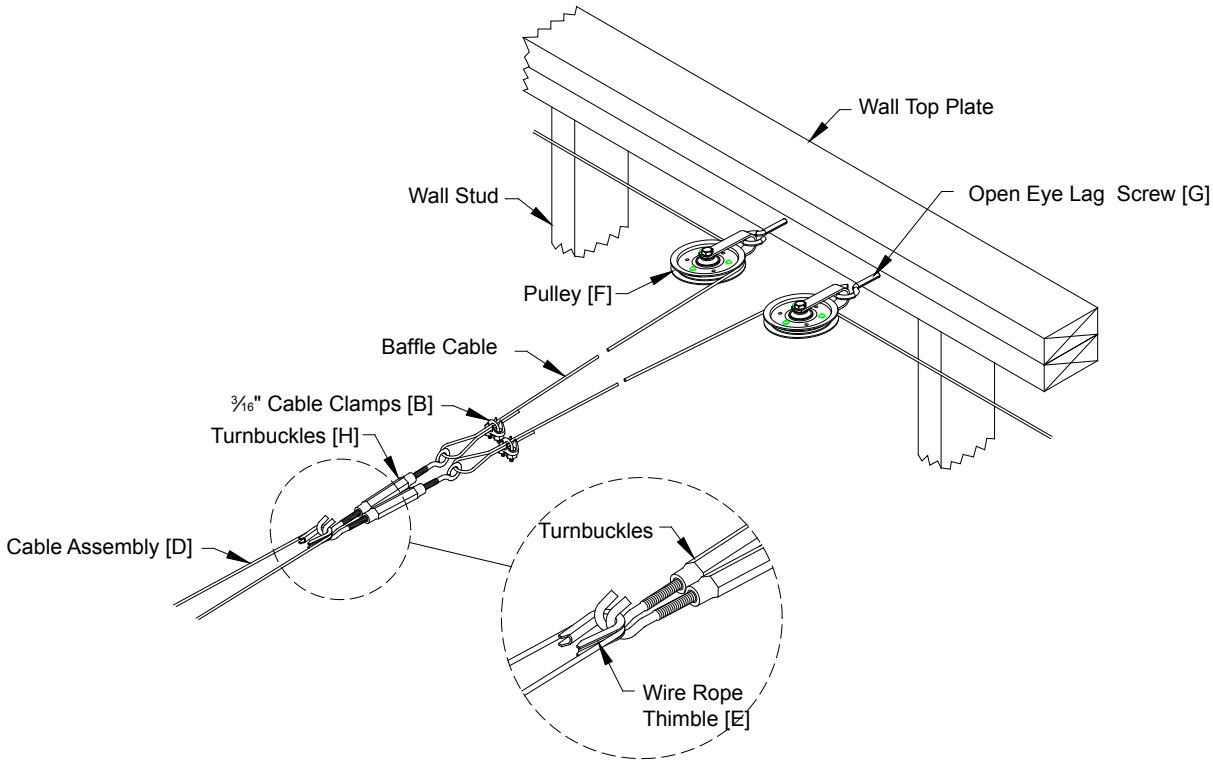
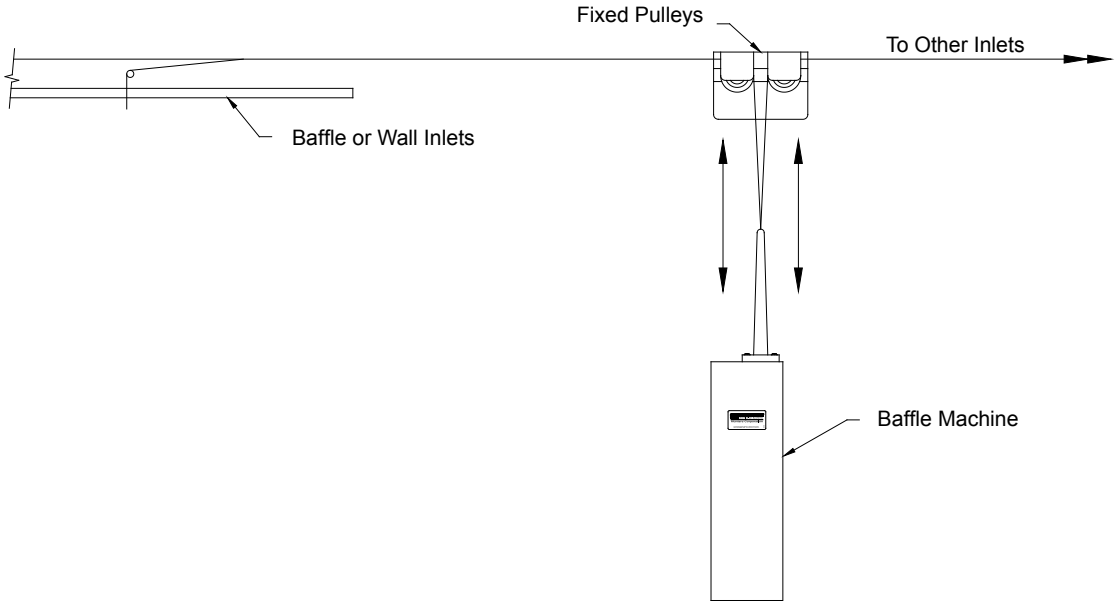


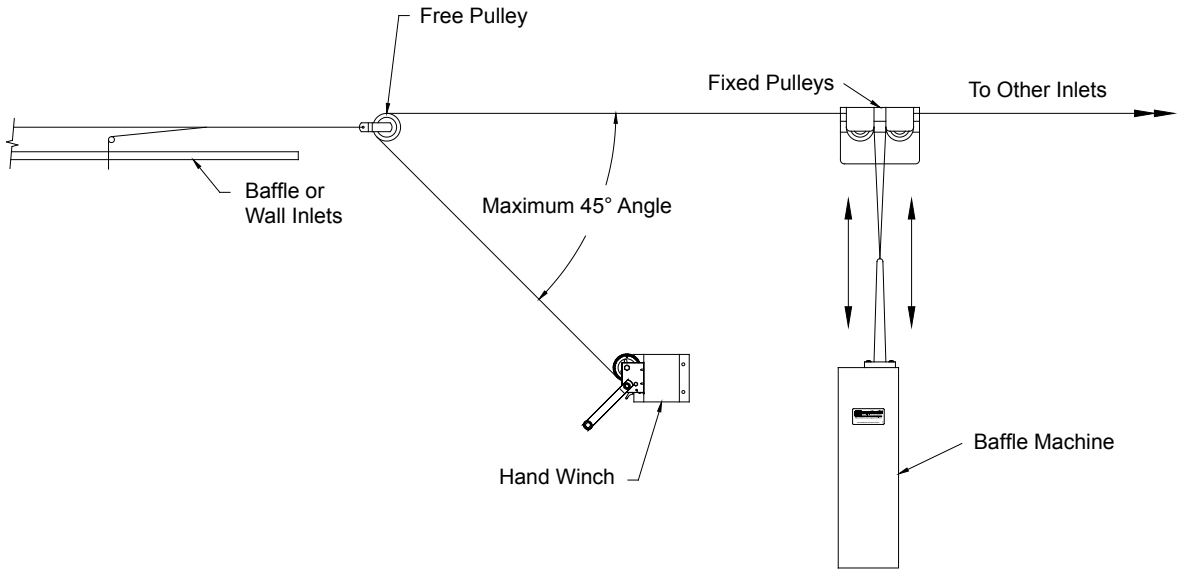
Figure 6

BAFFLE MACHINE AND CABLING WITHOUT HAND WINCH



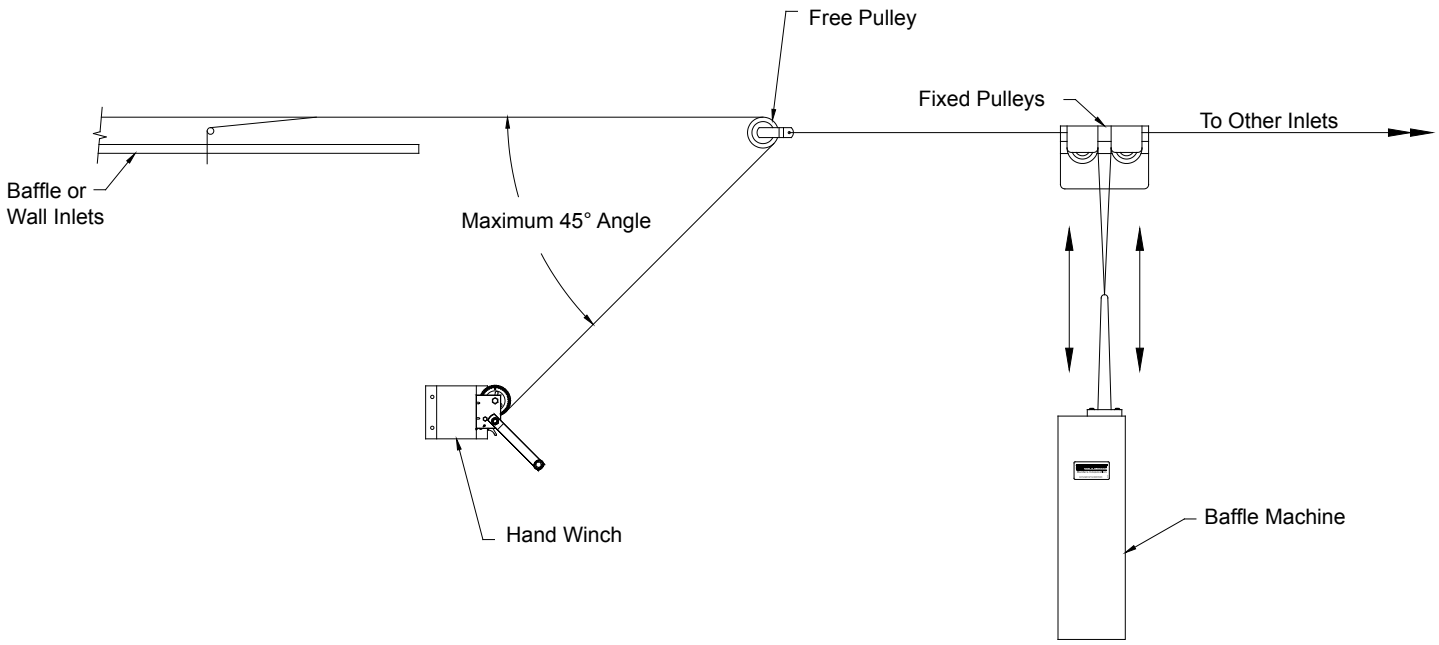
NOTE: When the baffle machine is connected directly to the inlets, they will both travel the same rate and the normal load will be applied to the baffle machine.

BAFFLE MACHINE AND CABLING WITH HAND WINCH INSTALLED



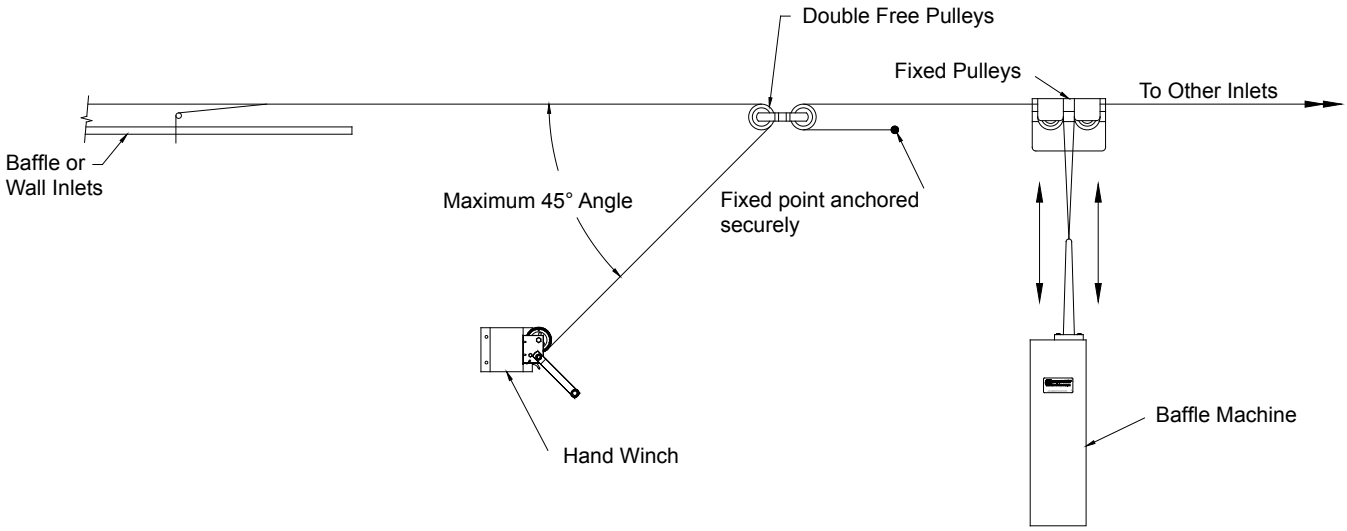
NOTE: When a Hand Winch is connected to the baffle machine and a free pulley is connected to the inlets, the inlets will travel at half the rate of the baffle machine. This is because for every 1" the baffle machine travels, the inlets will move 1/2". Only half of the load will be applied to the baffle machine therefore it will have twice the pulling capacity.

BAFFLE MACHINE AND CABLING WITH HAND WINCH INSTALLED



NOTE: When a Hand Winch is connected to the inlets and a Free Pulley is connected to the baffle machine, the baffle will travel at twice the rate of the baffle machine. This is because for every 1" the baffle machine travels the inlets will move 2". Twice as much load will be applied to the baffle machine and it will have half the pulling capacity.

BAFFLE MACHINE AND CABLING WITH HAND WINCH INSTALLED



NOTE: When a Hand Winch is connected to the inlets and two free pulleys are connected in line, the inlets will travel at the same rate as the baffle machine. For every 1" the baffle machine travels the inlets will move 1". The normal load will be applied to the baffle machine.

ELECTRICAL WIRING

Step 1

All wiring should be in accordance with National, State and Local electrical codes. Make electrical connections as shown on terminal block label inside actuator.

Step 2

Each actuator should have independent overload protection matched to its motor (Aerotech circuit breaker Catalog No. SY2010).

Step 3

Open, close and neutral outputs from the air monitor control are to be wired to the open, close and neutral inputs of the actuator. ***See Figure 7a.*** If using the BA1701PT, connect the inlet position output from the actuator to an environmental computer control having inlet control capability. ***See Figure 7b.***

Step 4

Turn on the electrical supply to the Actuator and the Air-Monitor Control. It is now ready to operate.

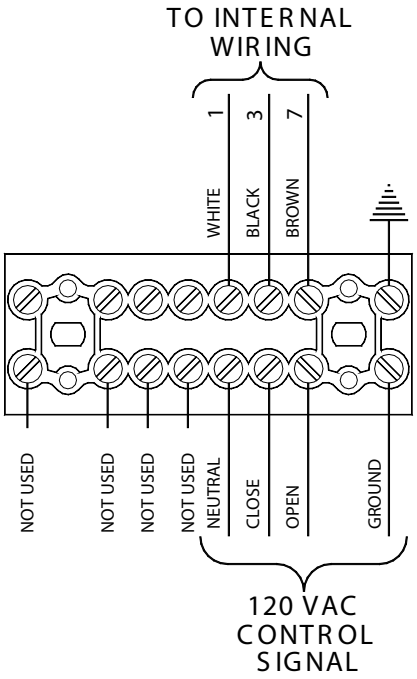


Figure 7a

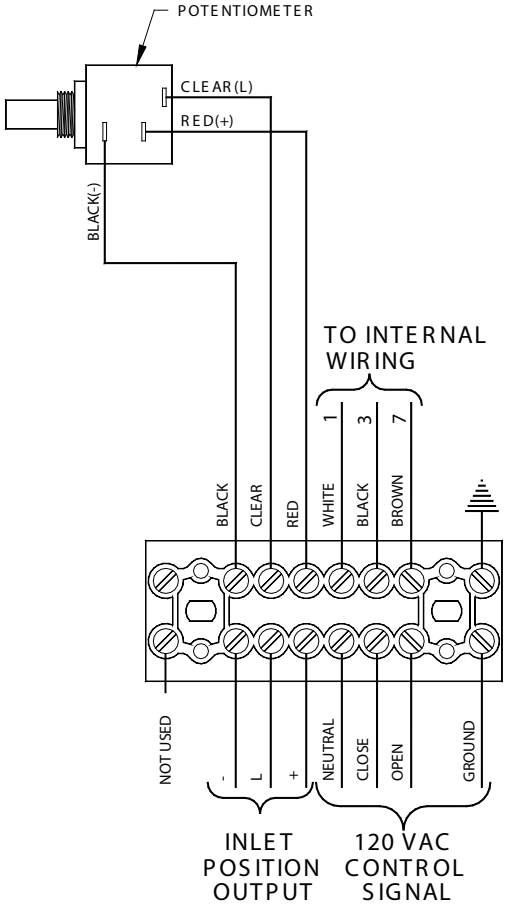


Figure 7b

OPERATION

NOTE: The baffle machine is shipped from the factory with the open and close limit switches set for mid range operation. ***See Figure 8.*** These switches **MUST** be set for your installation to assure proper operation.

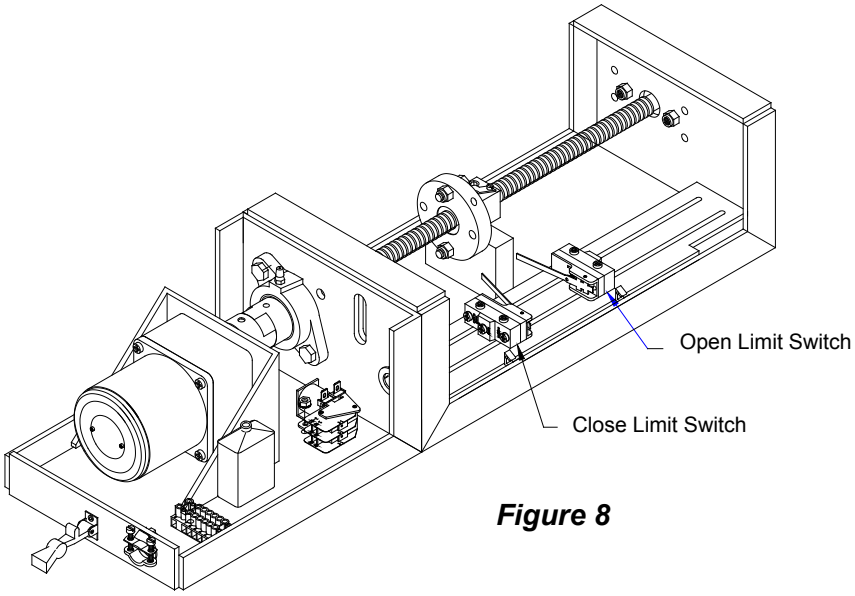


Figure 8

Adjust Close Limit Switch

Step 1

Loosen the 2 screws in the close limit switch and slide the switch back towards motor. Manually run baffle machine to the full close position for the baffles or inlets. Slide the close limit switch against Guide Block so that it activates the close limit switch, tighten the screws. ***See Figure 9.*** Manually run baffle machine open about 1" and back close to check for proper full close position.

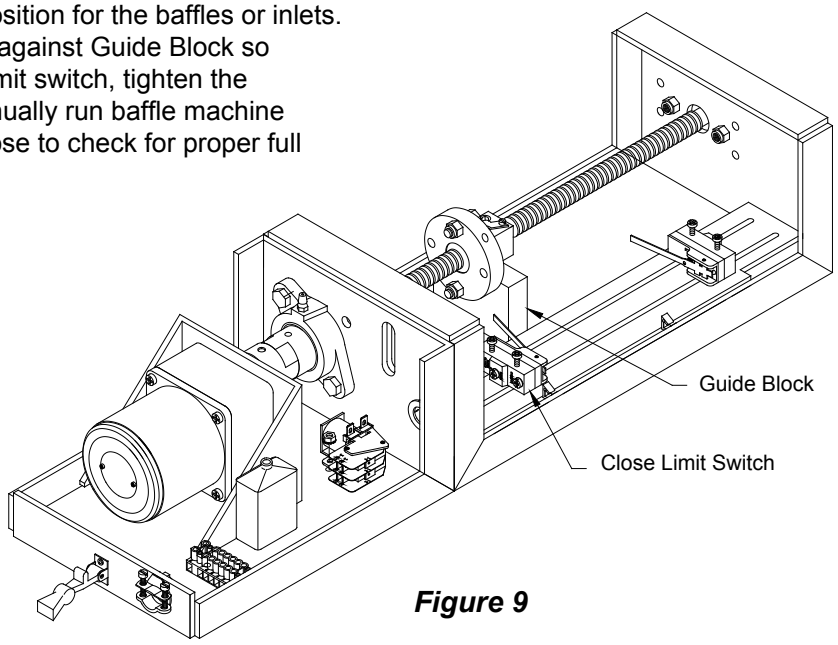


Figure 9

Adjust Open Limit Switch:

Step 2

Loosen the 2 screws on the open limit switch and slide the switch towards end of machine. ***See Figure 10.*** Manually run the baffle machine to the full open position for the baffles or inlets. Slide the open limit switch against Guide Block so that it activates the open limit switch, tighten the screws. ***See Figure 11.*** Manually run baffle machine close about 1" and back open to check for proper full open position.

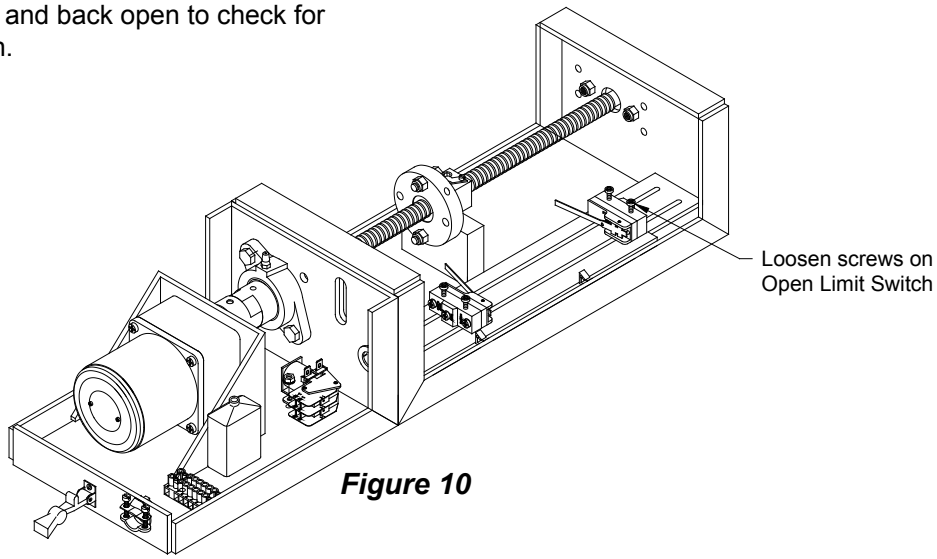


Figure 10

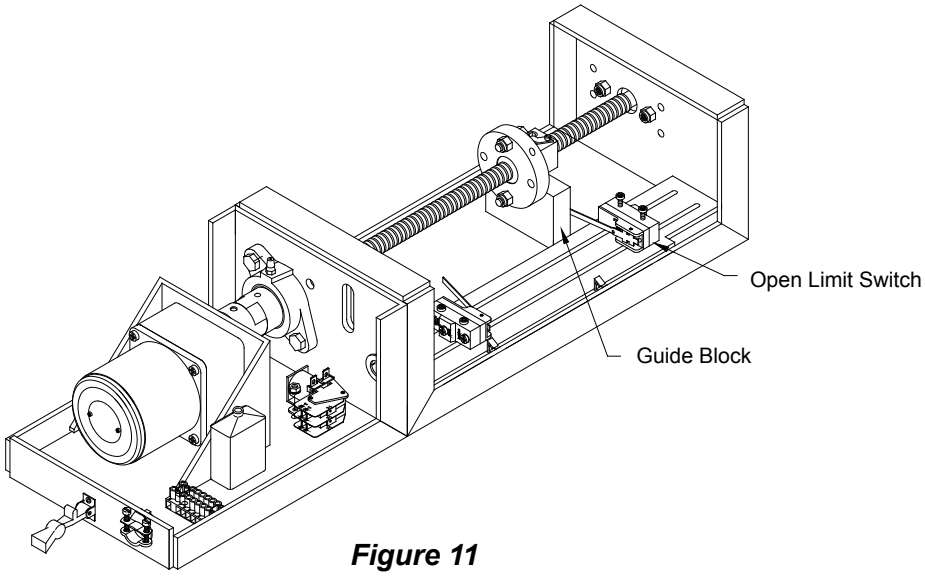


Figure 11

Step 3

Place all switches and controls in auto. Test operation of baffle machine using the Air-Monitor control or environmental computer control.

MAINTENANCE

Step 1

Remove dust buildup from control using a softbrush or dry cloth. **Never** use liquids to clean electrical cords or wires.

Step 2

Keep actuator shaft and bearings lubricated with a high quality lithium based grease.

Step 3

Verify the upper and lower limit switches are positioned in proper place.

TROUBLESHOOTING

In order to make these checks a voltmeter is required. All actuator circuitry is 120VAC. To troubleshoot, power must be on. Use EXTREME CAUTION when checking voltage. DO NOT attempt these tests if you are not experienced in working on electrical control systems, instead, contact a qualified electrician or service technician. Refer to the following wiring diagrams while troubleshooting:

Figure 12: BA1701/BA1701PT

Figure 13: BA1701-30/BA1701PT- 30

For BA1701/BA1701PT*

Actuator does not CLOSE or OPEN when signaled to:

A. CLOSE
   1) Check for 120VAC. at gray* and red wires on motor. If voltage is present, repair or replace motor.

   2) Check for 120VAC #4 and #1 (neutral). If voltage is present, replace limit switch.

   3) Check for 120VAC #3 and #1 (neutral). If voltage is present, replace DPDT relay.

   4) Check output of Actuator control to make sure the actuator is receiving a signal to close. If voltage is not present, check main electrical service panel in building and wiring from control.

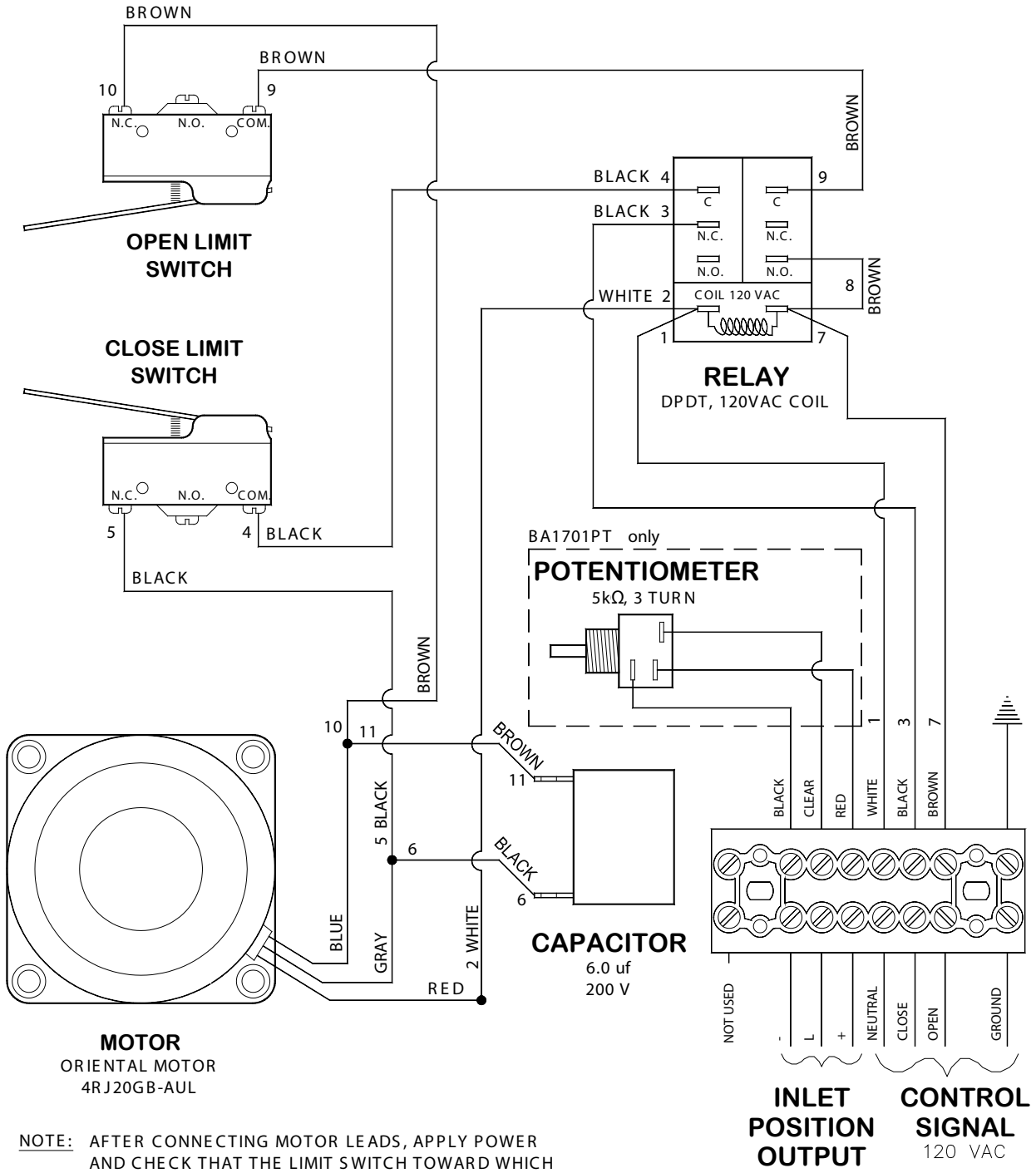
B. OPEN
   1) Check for 120VAC at blue* and red wires on the motor. If voltage is present repair or replace motor.

   2) Check for 120VAC on #9 and #1 (neutral). If voltage is present replace limit switch.

   3) Check for 120VAC on #7 and #1 (neutral) at the coil on relay. If voltage is there replace relay.

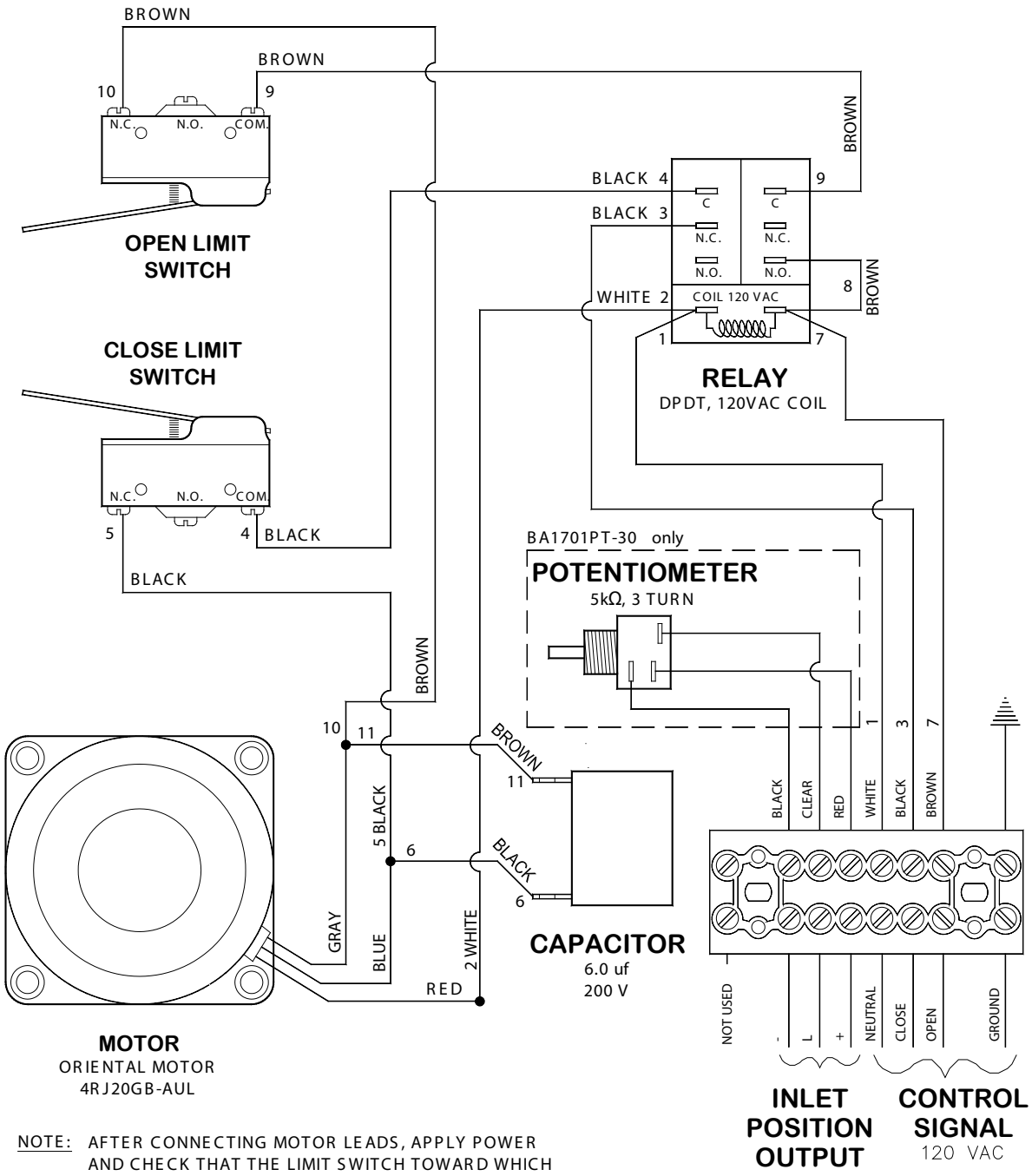
   4) Check output of the Actuator control to make sure the actuator is receiving a signal to open. If voltage is not present, check main electrical service panel in the building and wiring from control.

***Note:** For BA1701-30/BA1701PT- 30 gray and blue motor leads are reversed.



NOTE: AFTER CONNECTING MOTOR LEADS, APPLY POWER AND CHECK THAT THE LIMIT SWITCH TOWARD WHICH THE CABLE MOUNTING FLANGE IS MOVING WILL STOP MOTOR. IF IT DOES NOT, INTERCHANGE GRAY AND BLUE MOTOR LEADS AND CHECK AGAIN.

Figure 12
BA1701/BA1701PT

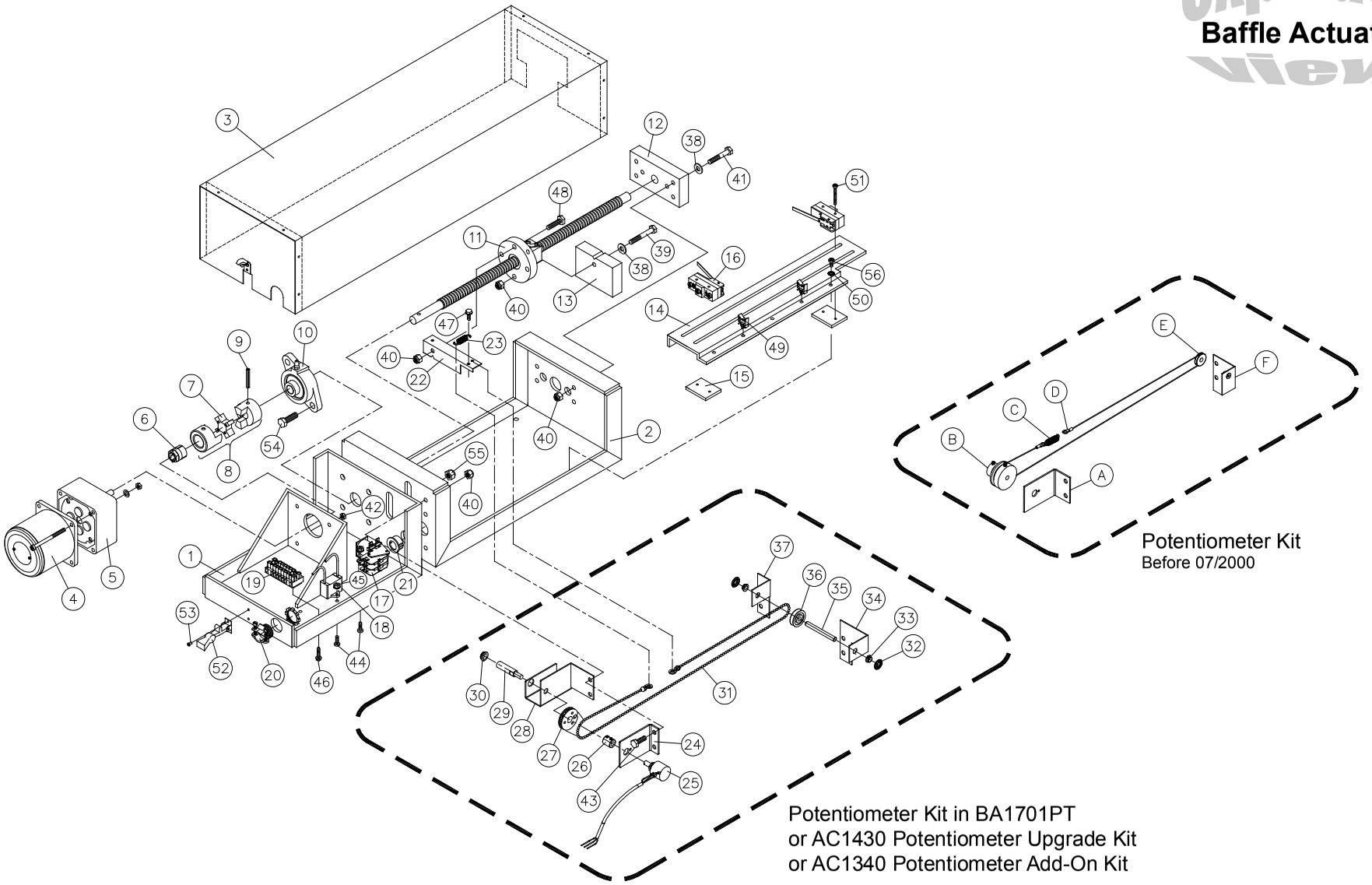


NOTE: AFTER CONNECTING MOTOR LEADS, APPLY POWER AND CHECK THAT THE LIMIT SWITCH TOWARD WHICH THE CABLE MOUNTING FLANGE IS MOVING WILL STOP MOTOR. IF IT DOES NOT, INTERCHANGE GRAY AND BLUE MOTOR LEADS AND CHECK AGAIN.

Figure 13
BA1701-30/BA1701PT- 30

exploded view

Baffle Actuator



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	Cat.No.	Part Name/Descriptionw	Qty.
1	AC1330	Lower Frame Section with Base, CTD-GZ	1
2	AC1329	Upper Frame Section, CTD-GZ	1
3	AC1333	Cover Only for BA1701, AL	1
4	AC1325C	Motor (4RJ20), 120V, with Capacitor	1
5	AC1326	Gearhead, 360:1, (4GB360KA)	1
6	FP2053	Prop Fastener, 5⁄16" I.D. x ¾" O.D.	1
7	AC1345	Spider Insert, 070 Coupler, Rubber	1
8	AC1328	Complete 070 Coupler .5" x .75"	1
9	KP1010	Slotted Spring Pin, 3⁄16"D. x 1.25"L., BLK	1
10	AC1070	Bearing, 2-Bolt Flange, ½" Bore, Set Screws, CI	1
11	AC1080	Ball Screw with Nut and Flange	1
12	AC1308	Cable Guide Block, PL	1
13	AC1307	Ball Nut Guide Block, PL	1
14	AC1331	Electrical Mounting Plate, GZ	1
15	AC1332	Retainer Plate For Limit Switch, GZ	2
16	AC1019	Snap-Acting Switch with EXT Spring, 15A	2
17	AC3120	DPDT Relay, 20A/2HP Max., 120VAC Coil	1
18	AC1427	Capacitor, 6MFD, 250VAC, Sealed, 4" Leads	1
19	FC1095	8-Pole Terminal Block, 12 AWG Max, 20A	1
20	KE1151	Connector, C500 ⅜" Romex Clamp, ZP	1
21	KX1101	Snap Bushing, ⅞"D, WHT or BLK PL	1
22	AC1348	Feedback Cable Bracket, GZ	1
23	KX1452	Spring, Tension, 5⁄16"D. x 1.06"L., SS	1
24	AC1316	Bracket, Pot. Support, GZ	1
25	AC1337	Potentiometer with Cable	1
26	KX1052	Collar, Set Screw, ¼" Shaft, SS	1
27	AC1317	Sprocket, 24-Dimple, D-Shaft, NY	1
28	AC1315	Bracket, Leading, GZ	1
29	AC1320	Shaft, ⅜"D x 1.8"L., with Flat, NY	1
30	KX1123	Bushing, Insert type, ⅜" Shaft, MDS-NY	1
31	AC1392	Chain Drive w/ Coupling and Spring	1
32	KX1003	Clip, Retainer, For ¼" Dia. Rod, SS	2
33	KX1124	Bushing, Insert type, ¼" Shaft, MDS-NY	2

Continued on next page

	Cat. No.	Part Name/Description	Qty
34	AC1313	Bracket, Rear Following, GZ	1
35	AC1319	Shaft, ¼" x 2.25"L, SS	1
36	AC1318	Pulley, 1" Dia., NY	1
37	AC1314	Bracket, Front Following, GZ	1
38	KW3002	Flat Washer, ¼" Type-A, Narrow, SS	5
39	KS1020	Cap Screw, ¼"-20 x 1.75" Hex, ZP	1
40	KN1558	Nut, Keps, ¼"-20, ZP	10
41	KS1005	Cap Screw, ¼"-20 x 1.5" Hex, SS	4
42	KN1555	Nut, Keps, M5-.8 Metric, ZP	4
43	KS1015	Cap Screw, ¼"-20 x ¾" Hex, ZP	4
44	KS0655	Machine Screw, #6-32 x ⅝" PHL-PN, ZP	2
45	KN1552	Nut, Keps, #6-32, ZP	2
46	KS2156	Tap Screw (AB), #8 x ⅝" PHL-PN, ZP	2
47	KS2301	TEK Screw, #10 x ½" PHL-PN, ZP	1
48	KS1001	Cap Screw, ¼"-20 x 1" Hex, FULLTHD, ZP	1
49	KE1152	Push Mount Wire Holder, 7/16" I.D., NY	2
50	KW3651	Locking Washer, #8, EXT-STAR, ZP	3
51	KS2153	Tap Screw (AB), #6 x 1.25" PHL-PN, ZP	4
52	AC1334	Draw Latch, Flexible, with Keeper & Hardware	1
53	KR1061	Pop Rivet, ⅛"D x 3/16"-¼" Grip, SS	1
54	KS1017	Cap Screw, 5/16"-18 x 1" Hex, ZP	2
55	KN1706	Nylock Nut, 5/16"-18, ZP	2
56	KS0651	Machine Screw, #8-32 x ⅜" PHL-PN, ZP	3
		Potentiometer Kit before 07/2000 -- (Order AC1430 Upgrade Kit)	
A	AC1316	Bracket, Pot. Support, GZ	1
B	AC1338	Pot. Drive, 1.5" O.D. w/ Setscrews Obsolete	1
C	KX1452	Spring, Tension, 5/16" D. x 1.06"L., SS	1
D	AC1335	Cable w/Fittings, Pot. Drive, BA1701PT	1
E	AC1336	Pulley, Idler, ¾" O.D. x ¼" I.D. Obsolete	1
F	AC1339	Bracket, Idler Pulley, BA1701PT Obsolete	1