

## How to Measure for High Velocity Accordions

### Width:

1. Measure buck opening
2. Go to HV Stacking Chart
  - a. Go to Coverage Column
  - b. Find closest measurement to buck opening, round up.
  - c. Go across on that row to track column.
  - d. This is the Track Width and also the Finished Width.
  - e. Write down this measurement in Finished Width on order form.

### Height:

1. Use sample tracks to help determine best choice of track needed.
2. Hold track up to window at the top. Mark top edge of track.
3. Do the same to bottom of window.
4. Measure from mark to mark. This will be the Finished Height.
5. Write down this measurement in the Finished Height on order form.

The Accordion Storm Shutter measuring instructions are simple. The basis for all measurements is the width and height measurements of the opening you plan to protect.

Before measuring, let's decide if you will surface mount the shutter on the face of the building around the opening or will you install the shutter recessed inside of the opening.

A recessed installation means the shutter will be between two surfaces horizontally and or between a floor and a ceiling. If you have a deeply recessed opening (5" or more) and you want or need to mount recessed into the opening, that is the dimension in inches we need. We will manufacture the shutter to fit inside the recessed area.

If your shutter is a floor-to-ceiling installation, (We call that "trapped") the actual dimension from the floor to the ceiling in inches is what we need. With the dimensions and type of installation we will send the correct headers and sills and manufacture the Accordion shutter to fit inside your opening. Keep in mind, the shutter when in the stored position will provide a clear opening less than the actual width of the shutter. The clear opening in width will be reduced by 3.5" plus one inch per foot of actual shutter width. For example a 12' wide shutter when in the stored position will provide a clear opening width of 10' 8.5". The shutter can be designed to open one way or center open or some combination in between.

A surface-mount installation requires the measuring of the width and height in inches for the opening you want to protect. We also need to know if the opening is a window or door. We will ship a shutter in a width that will provide a clear opening at least as wide as the width dimension you give us. The height of the finished shutter will be proper to fit a window or a door as requested. The shutter width will be approximately 3.5" plus 1" per foot of shutter width wider than the opening width dimension you provided. The shutter can be a one-way open or a center open or a combination between. When measuring, take this into consideration... be sure nothing is in the way such as a light. The height of the shutter for a window will be 6" greater than the height dimension you provide. You will install the shutter header and sill 3" above and below the opening. We will provide the correct sill and headers for your type of installation. One more point. If you have a drip sill, we need to know the measurement from the top of sill to the bottom of the drip sill and how far it protrudes from the wall around it.

The door width is calculated the same as a window. The height may require a different type sill based on whether you have a step down from the door sill. If there is a step down, let us know that dimension in inches separately. We will make the allowances for adding that dimension.

Remember, all shutter prices are based on the finished size of the shutter not the opening being protected.

# The High Velocity Accordion Shutter Installation Procedure - One Man Crew

- 1) Be sure that you have the correct type and length of fasteners for this structure.
- 2) Review the diagram of the structure, unit locations and numbering sequence.
- 3) Verify the type of structure and corresponding fastener types and spacing.
- 4) Locate your power source, set up your cords, drills and hardware for assembly.
- 5) Remove a unit from the truck and place it near the opening.
- 6) Review the cut sheets to determine the configuration of each unit.
- 7) Place your ladder at the center of the opening and position your cords and drills.
- 8) Find the center of the opening and make a mark at the top to indicate center.
- 9) Find the center of the top track and make a mark at the top to indicate center.
- 10) Place the upper track above the opening and align your center for height and width.
- 11) Install 1 fastener into the center of the upper track, do not tighten all the way.
- 12) Check to be certain that it is level then finish installing the remainder of fasteners.
- 13) Take each unit, lubricate the wheels and place the left and right sections into the track.
- 14) Secure top of each accordion section to the tracks with 2 - #14 x 1 3/4" HV Screws.
- 15) Place the lower track below the opening and align your center for height and width.
- 16) Secure bottom of each accordion section to the tracks with 2 - #14 x 1 3/4" HV Screws.
- 17) Level one side then finish installing the remainder of fasteners into the bottom track.
- 18) Wipe down the unit, then caulk where necessary.
- 19) Be sure and check the operation and the locking mechanisms of each shutter.
- 20) To hold the shutter into non-hurricane position, use locking rods or Velcro straps.

This installation procedure is recommended when you have a one-man crew. Some smaller openings may be installed using the installation procedure that is recommended when you have a two-man crew.



# The High Velocity Accordion Shutter Installation Procedure - Two Man Crew

- 1) Be sure that you have the correct type and length of fasteners for this structure.
- 2) Review the diagram of the structure, unit locations and numbering sequence.
- 3) Verify the type of structure and corresponding fastener types and spacing.
- 4) Choose an area of the driveway that you can unload and assemble each unit.
- 5) Cover that area of the driveway with a heavy cloth tarp or cardboard.
- 6) Locate your power source, set up your cords, drills and hardware for assembly.
- 7) Remove a unit from the truck and place it onto the work area.
- 8) Review the cut sheets to determine the configuration of each unit.
- 9) Open each unit, lubricate the wheels and place the accordions into the track.
- 10) Secure each accordion section to the tracks with 2 - #14 x 1 3/4" HV Screws.
- 11) Once you have secured all four corners, the units can be placed near each opening.
- 12) Place your ladder at the center of the opening and position your cords and drills.
- 13) Find the center of the opening and make a mark at the top to indicate center.
- 14) Find the center of the top track and make a mark at the top to indicate center.
- 15) Place the shutter unit over the opening and align your center for height and width.
- 16) Install 1 or 2 fasteners into the upper track, check to be certain that it is level.
- 17) Level one side, then place 1 or 2 fasteners into the lower track.
- 18) Finish installing the remainder of fasteners, then caulk where necessary.
- 19) Be sure and check the operation and the locking mechanisms of each shutter.
- 20) To hold the shutter into non-hurricane position, use locking rods or Velcro straps.

This installation procedure is recommended when you have a two-man crew. Some larger openings may require three men when using this method, or use the installation procedure that is recommended when you have a one-man crew.



**ASSA Bertha High Velocity Accordion Stacking Chart  
(W/ Centermates)**

Blades	Coverage	Stack	Track	Blades	Coverage	Stack	Track
1	7.00	3.75	10.75	51	157.00	16.25	173.25
2	10.00	4.00	14.00	52	160.00	16.50	176.50
3	13.00	4.25	17.25	53	163.00	16.75	179.75
4	16.00	4.50	20.50	54	166.00	17.00	183.00
5	19.00	4.75	23.75	55	169.00	17.25	186.25
6	22.00	5.00	27.00	56	172.00	17.50	189.50
7	25.00	5.25	30.25	57	175.00	17.75	192.75
8	28.00	5.50	33.50	58	178.00	18.00	196.00
9	31.00	5.75	36.75	59	181.00	18.25	199.25
10	34.00	6.00	40.00	60	184.00	18.50	202.50
11	37.00	6.25	43.25	61	187.00	18.75	205.75
12	40.00	6.50	46.50	62	190.00	19.00	209.00
13	43.00	6.75	49.75	63	193.00	19.25	212.25
14	46.00	7.00	53.00	64	196.00	19.50	215.50
15	49.00	7.25	56.25	65	199.00	19.75	218.75
16	52.00	7.50	59.50	66	202.00	20.00	222.00
17	55.00	7.75	62.75	67	205.00	20.25	225.25
18	58.00	8.00	66.00	68	208.00	20.50	228.50
19	61.00	8.25	69.25	69	211.00	20.75	231.75
20	64.00	8.50	72.50	70	214.00	21.00	235.00
21	67.00	8.75	75.75	71	217.00	21.25	238.25
22	70.00	9.00	79.00	72	220.00	21.50	241.50
23	73.00	9.25	82.25	73	223.00	21.75	244.75
24	76.00	9.50	85.50	74	226.00	22.00	248.00
25	79.00	9.75	88.75	75	229.00	22.25	251.25
26	82.00	10.00	92.00	76	232.00	22.50	254.50
27	85.00	10.25	95.25	77	235.00	22.75	257.75
28	88.00	10.50	98.50	78	238.00	23.00	261.00
29	91.00	10.75	101.75	79	241.00	23.25	264.25
30	94.00	11.00	105.00	80	244.00	23.50	267.50
31	97.00	11.25	108.25	81	247.00	23.75	270.75
32	100.00	11.50	111.50	82	250.00	24.00	274.00
33	103.00	11.75	114.75	83	253.00	24.25	277.25
34	106.00	12.00	118.00	84	256.00	24.50	280.50
35	109.00	12.25	121.25	85	259.00	24.75	283.75
36	112.00	12.50	124.50	86	262.00	25.00	287.00
37	115.00	12.75	127.75	87	265.00	25.25	290.25
38	118.00	13.00	131.00	88	268.00	25.50	293.50
39	121.00	13.25	134.25	89	271.00	25.75	296.75
40	124.00	13.50	137.50	90	274.00	26.00	300.00
41	127.00	13.75	140.75	91	277.00	26.25	303.25
42	130.00	14.00	144.00	92	280.00	26.50	306.50
43	133.00	14.25	147.25	93	283.00	26.75	309.75
44	136.00	14.50	150.50	94	286.00	27.00	313.00
45	139.00	14.75	153.75	95	289.00	27.25	316.25
46	142.00	15.00	157.00	96	292.00	27.50	319.50
47	145.00	15.25	160.25	97	295.00	27.75	322.75
48	148.00	15.50	163.50	98	298.00	28.00	326.00
49	151.00	15.75	166.75	99	301.00	28.25	329.25
50	154.00	16.00	170.00	100	304.00	28.50	332.50

**\*\*THESE ARE CALCULATED WIDTHS ONLY-PLEASE VERIFY TRUE WIDTHS\*\***

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(W/ Centermates)**

Blades	Coverage	Stack	Track	Blades	Coverage	Stack	Track
101	307.00	28.75	335.75	151	457.00	41.25	498.25
102	310.00	29.00	339.00	152	460.00	41.50	501.50
103	313.00	29.25	342.25	153	463.00	41.75	504.75
104	316.00	29.50	345.50	154	466.00	42.00	508.00
105	319.00	29.75	348.75	155	469.00	42.25	511.25
106	322.00	30.00	352.00	156	472.00	42.50	514.50
107	325.00	30.25	355.25	157	475.00	42.75	517.75
108	328.00	30.50	358.50	158	478.00	43.00	521.00
109	331.00	30.75	361.75	159	481.00	43.25	524.25
110	334.00	31.00	365.00	160	484.00	43.50	527.50
111	337.00	31.25	368.25	161	487.00	43.75	530.75
112	340.00	31.50	371.50	162	490.00	44.00	534.00
113	343.00	31.75	374.75	163	493.00	44.25	537.25
114	346.00	32.00	378.00	164	496.00	44.50	540.50
115	349.00	32.25	381.25	165	499.00	44.75	543.75
116	352.00	32.50	384.50	166	502.00	45.00	547.00
117	355.00	32.75	387.75	167	505.00	45.25	550.25
118	358.00	33.00	391.00	168	508.00	45.50	553.50
119	361.00	33.25	394.25	169	511.00	45.75	556.75
120	364.00	33.50	397.50	170	514.00	46.00	560.00
121	367.00	33.75	400.75	171	517.00	46.25	563.25
122	370.00	34.00	404.00	172	520.00	46.50	566.50
123	373.00	34.25	407.25	173	523.00	46.75	569.75
124	376.00	34.50	410.50	174	526.00	47.00	573.00
125	379.00	34.75	413.75	175	529.00	47.25	576.25
126	382.00	35.00	417.00	176	532.00	47.50	579.50
127	385.00	35.25	420.25	177	535.00	47.75	582.75
128	388.00	35.50	423.50	178	538.00	48.00	586.00
129	391.00	35.75	426.75	179	541.00	48.25	589.25
130	394.00	36.00	430.00	180	544.00	48.50	592.50
131	397.00	36.25	433.25	181	547.00	48.75	595.75
132	400.00	36.50	436.50	182	550.00	49.00	599.00
133	403.00	36.75	439.75	183	553.00	49.25	602.25
134	406.00	37.00	443.00	184	556.00	49.50	605.50
135	409.00	37.25	446.25	185	559.00	49.75	608.75
136	412.00	37.50	449.50	186	562.00	50.00	612.00
137	415.00	37.75	452.75	187	565.00	50.25	615.25
138	418.00	38.00	456.00	188	568.00	50.50	618.50
139	421.00	38.25	459.25	189	571.00	50.75	621.75
140	424.00	38.50	462.50	190	574.00	51.00	625.00
141	427.00	38.75	465.75	191	577.00	51.25	628.25
142	430.00	39.00	469.00	192	580.00	51.50	631.50
143	433.00	39.25	472.25	193	583.00	51.75	634.75
144	436.00	39.50	475.50	194	586.00	52.00	638.00
145	439.00	39.75	478.75	195	589.00	52.25	641.25
146	442.00	40.00	482.00	196	592.00	52.50	644.50
147	445.00	40.25	485.25	197	595.00	52.75	647.75
148	448.00	40.50	488.50	198	598.00	53.00	651.00
149	451.00	40.75	491.75	199	601.00	53.25	654.25
150	454.00	41.00	495.00	200	604.00	53.50	657.50

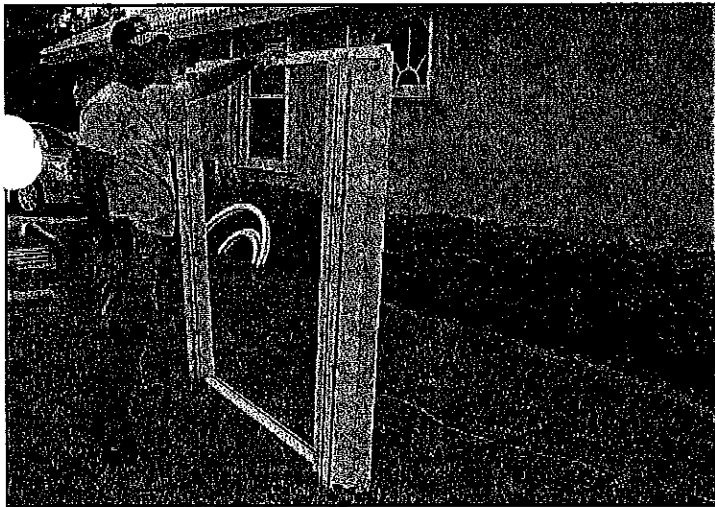
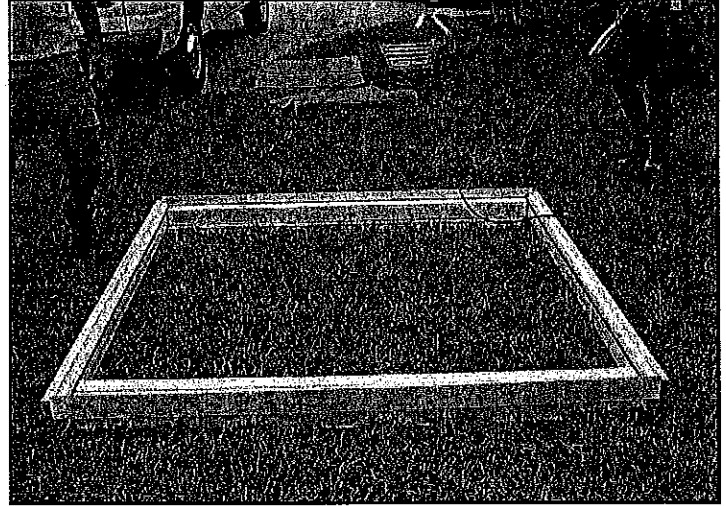
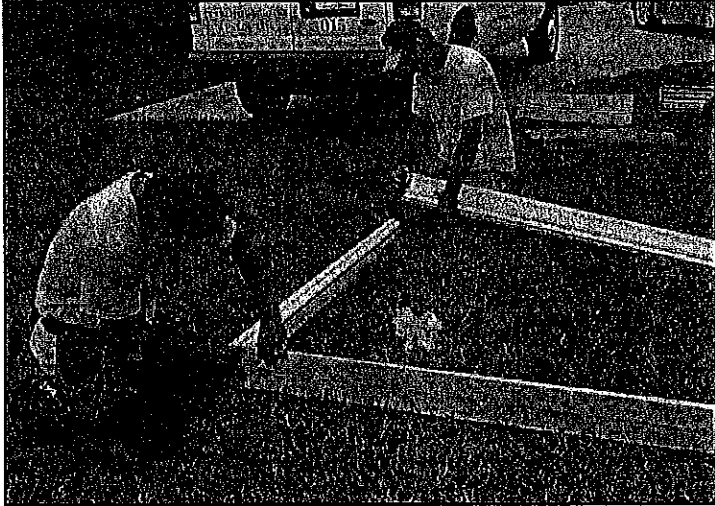
\*\*THESE ARE CALCULATED WIDTHS ONLY- PLEASE VERIFY TRUE WIDTHS\*\*

**ASSA Bertha High Velocity Accordion Stacking Chart  
(W/ Centermates)**

Blades	Coverage	Stack	Track	Blades	Coverage	Stack	Track
201	607.00	53.75	660.75	251	757.00	66.25	823.25
202	610.00	54.00	664.00	252	760.00	66.50	826.50
203	613.00	54.25	667.25	253	763.00	66.75	829.75
204	616.00	54.50	670.50	254	766.00	67.00	833.00
205	619.00	54.75	673.75	255	769.00	67.25	836.25
206	622.00	55.00	677.00	256	772.00	67.50	839.50
207	625.00	55.25	680.25	257	775.00	67.75	842.75
208	628.00	55.50	683.50	258	778.00	68.00	846.00
209	631.00	55.75	686.75	259	781.00	68.25	849.25
210	634.00	56.00	690.00	260	784.00	68.50	852.50
211	637.00	56.25	693.25	261	787.00	68.75	855.75
212	640.00	56.50	696.50	262	790.00	69.00	859.00
213	643.00	56.75	699.75	263	793.00	69.25	862.25
214	646.00	57.00	703.00	264	796.00	69.50	865.50
215	649.00	57.25	706.25	265	799.00	69.75	868.75
216	652.00	57.50	709.50	266	802.00	70.00	872.00
217	655.00	57.75	712.75	267	805.00	70.25	875.25
218	658.00	58.00	716.00	268	808.00	70.50	878.50
219	661.00	58.25	719.25	269	811.00	70.75	881.75
220	664.00	58.50	722.50	270	814.00	71.00	885.00
221	667.00	58.75	725.75	271	817.00	71.25	888.25
222	670.00	59.00	729.00	272	820.00	71.50	891.50
223	673.00	59.25	732.25	273	823.00	71.75	894.75
224	676.00	59.50	735.50	274	826.00	72.00	898.00
225	679.00	59.75	738.75	275	829.00	72.25	901.25
226	682.00	60.00	742.00	276	832.00	72.50	904.50
227	685.00	60.25	745.25	277	835.00	72.75	907.75
228	688.00	60.50	748.50	278	838.00	73.00	911.00
229	691.00	60.75	751.75	279	841.00	73.25	914.25
230	694.00	61.00	755.00	280	844.00	73.50	917.50
231	697.00	61.25	758.25	281	847.00	73.75	920.75
232	700.00	61.50	761.50	282	850.00	74.00	924.00
233	703.00	61.75	764.75	283	853.00	74.25	927.75
234	706.00	62.00	768.00	284	856.00	74.50	930.50
235	709.00	62.25	771.25	285	859.00	74.75	933.75
236	712.00	62.50	774.50	286	862.00	75.00	937.00
237	715.00	62.75	777.75	287	865.00	75.25	940.25
238	718.00	63.00	781.00	288	868.00	75.50	943.50
239	721.00	63.25	784.25	289	871.00	75.75	946.75
240	724.00	63.50	787.50	290	874.00	76.00	950.00
241	727.00	63.75	790.75	291	877.00	76.25	953.25
242	730.00	64.00	794.00	292	880.00	76.50	956.50
243	733.00	64.25	797.25	293	883.00	76.75	959.75
244	736.00	64.50	800.50	294	886.00	77.00	963.00
245	739.00	64.75	803.75	295	889.00	77.25	966.25
246	742.00	65.00	807.00	296	892.00	77.50	969.50
247	745.00	65.25	810.25	297	895.00	77.75	972.75
248	748.00	65.50	813.50	298	898.00	78.00	976.00
249	751.00	65.75	816.75	299	901.00	78.25	979.25
250	754.00	66.00	820.00	300	904.00	78.50	982.50
*THESE ARE CALCULTAED WIDTHS ONLY-PLEASE VERIFY TRUE WIDTHS*							

# Alutech United, Inc.

*The New High Velocity™ (HV) Accordion Shutter  
Faster Installation and Assembly Times*



***Seven minute elapsed installation***