

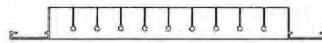
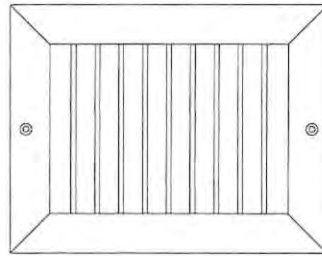
# SIDEWALL SUPPLY GRILLES

## PRODUCT DESCRIPTION

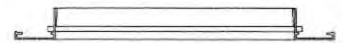
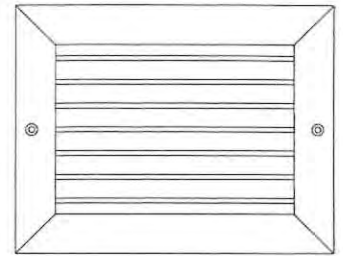
G1V and G1H single-deflection supply grilles with approximately 80% free area are recommended for applications requiring pattern adjustability in a single horizontal or vertical plane - sidewall location at ceiling line, sill grilles, or heating applications. These grilles perform efficiently with temperature differentials of up to 18-20° F heating and for ventilating while handling .75 to 1.75 cfm per square foot of room area with draftless distribution.

G2V and G2H double-deflection supply grilles are recommended for applications requiring control of both air pattern spread and drop. G2V models have vertical deflecting blades mounted at the face, with the rear set of deflecting blades mounted horizontally. G2H models have horizontal deflecting blades mounted at the face, with the rear set of deflecting blades mounted vertically. They perform efficiently with temperature differentials of 20-22° F cooling, 20-50° F heating and for ventilating while handling 1.0 to 2.0 cfm per square foot with draftless distribution. The combination of streamlined airfoil shaped blades and 3/4" spacing maintains a high effective free area capacity of approximately 65% which minimizes outlet velocity while reducing pressure drop requirement and assuring a quiet operation.

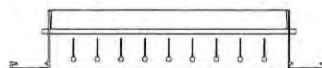
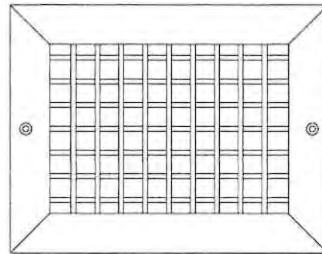
The entire assembly of these single and double deflection supply grilles is constructed of extruded aluminum with an etched and anodized finish. Support bars are installed 18" maximum. #6 x 1 1/2" mounting screws are furnished.



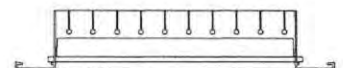
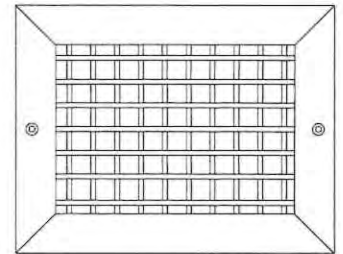
**G1V**



**G1H**



**G2V**

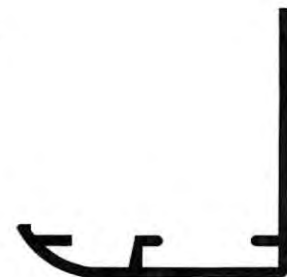


**G2H**

## Available Options

For 1/2" center - add suffix "5" to any model.  
Example: G1V5

For 1 1/4" curve frame - add suffix "Z" to any model.  
Example shown: "Z" frame.



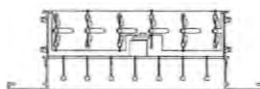
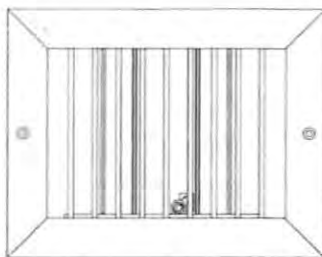
### PRODUCT DESCRIPTION

These single-deflection registers consist of one set of adjustable blades backed up with an opposed blade damper. R1VO and R1HO registers are recommended for applications requiring pattern adjustability in a single vertical or horizontal plane, sidewall location at ceiling line, or heating applications. They perform efficiently with temperature differentials of up to 18-20°F cooling, 20-50°F heating, and for ventilating while handling .75 to 1.75 cfm per square foot of room area with draftless distribution.

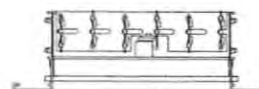
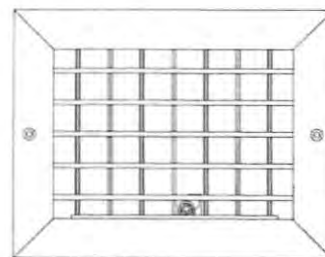
Reliable's R1VO and R1HO allows a free area of approximately 65% which minimizes outlet velocity while reducing pressure drop requirement and assuring a quiet operation.

Reliable's double-deflection registers consist of two sets of blades backed by an opposed blade damper. Models R2VO and R2HO are recommended for applications in systems requiring optimum flexibility of pattern change to accommodate changing job conditions. Individually adjustable blades are capable of shortening throw up to one-half with a wide spread deflection requiring only a 20% increase in outlet velocity at a fixed volume. The opposed blade damper can be set for the exact quantity of air desired and will distribute the air evenly over the entire face. The blades may then be set to give 4-way deflection of the air, thereby allowing throw adjustment as well as spread control. These registers perform efficiently with temperature differentials of 20-22°F cooling, 20-50°F heating and for ventilating while handling 1.0 to 2.0 cfm per square foot with draftless distribution. The combination of stream-lined foil shaped blades and 3/4" spacing maintains a high effective free area capacity of approximately 60% which minimizes outlet velocity, reduces pressure drop requirement, and assures a quiet operation.

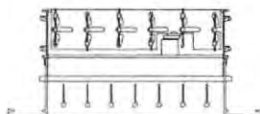
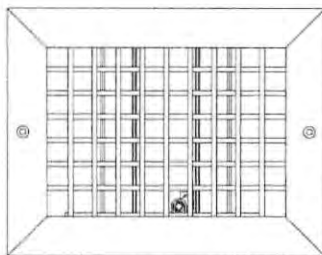
The entire assembly of our single and double deflection supply registers are constructed of extruded aluminum, with the frame and blades etched and anodized. Support bars are installed 18" maximum centers. #6 x 1 1/2" mounting screws are furnished.



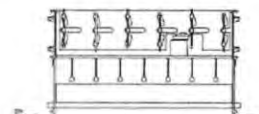
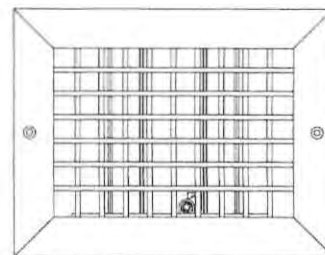
R1VO



R1HO



R2VO

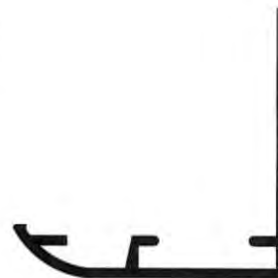


R2HO

### Available Options

For 1/2" center - add suffix "5" to any model.  
Example: R1VO5

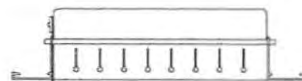
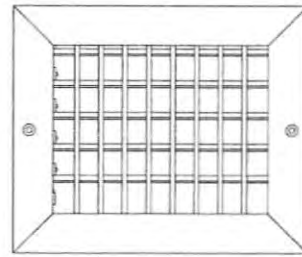
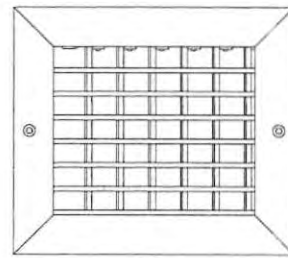
For 1 1/4" curve frame - add suffix "Z" to any model.  
Example shown: "Z" frame.



**PRODUCT DESCRIPTION**

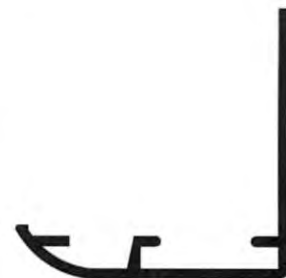
Models R1VM and R1HM are equipped with a multi-shutter damper of a curved design to effectively distribute air to the face of the grille with a minimum of turbulence and still perform the function of volume control. The curved blade design creates a blade structurally stronger and reduces the possibility of flutter. These registers perform efficiently with temperature differentials of up to 18-20°F cooling, 20-50°F heating and ventilating while handling .75 to 1.75 cfm per square foot of room area with draftless distribution. With a free area of approximately 65% which minimizes outlet velocity while reducing pressure drop requirements, these registers assure a quiet operation.

The entire assembly is constructed of extruded aluminum and the frame and individually adjustable blades are etched and anodized. Support bars are installed 18" maximum centers. #6 x 1 1/2" mounting screws are furnished.

**R1VM****R1HM****Available Options**

For 1/2" center - add suffix "5" to any model.  
Example: R1VM5

For 1 1/4" curve frame - add  
suffix "Z" to any model.  
Example shown: "Z" frame.



1. Determine the proper deflection for each grille or register face. For long throws and narrow deflections use the "A" deflection chart. For intermediate throws and deflections use the "B" deflection chart. For shorter throws and wide deflections use the "C" deflection chart. See chart below for the change in throw when the various deflections are used.

2. In the left hand column of the chart locate the desired

throw and then proceed horizontally to the column with the desired C.F.M. This point gives the key letter to the proper size register and the jet velocity. At the bottom of the chart check the size of the register corresponding to the key letter. Consult the velocity versus sound chart below to make sure that the velocity is within limits for installation. If the jet velocity is too great, select the next larger size register or grille. This will give a slightly reduced throw, but will provide satisfactory performance.

NOTE: Maximum throws are to a terminal velocity of 50 fpm, middle to 100 fpm, and minimum to 150 fpm.

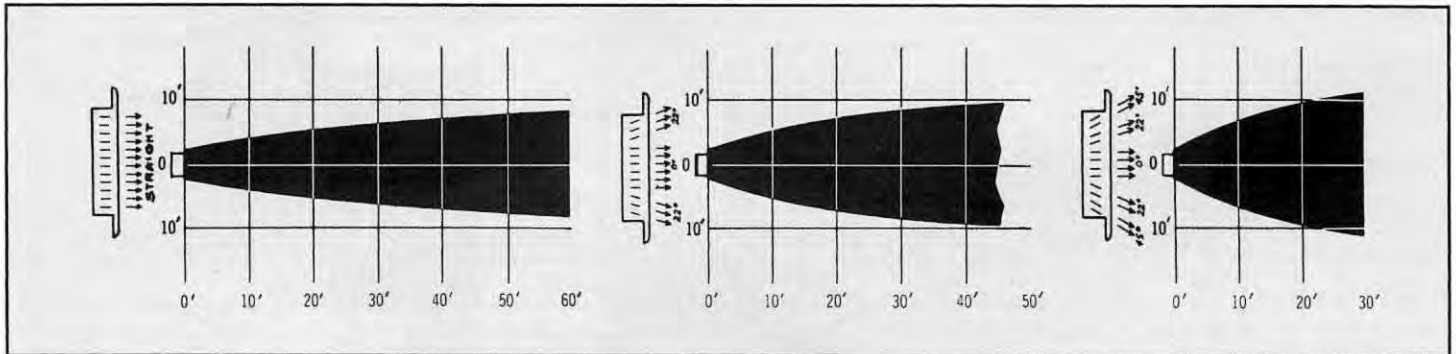
NC values are based on a room absorption of 8 dB, re  $10^{-12}$  watts, with a single register operating at  $0^\circ$  deflection. For deflections of  $22\frac{1}{2}^\circ$  and  $45^\circ$ , increase stated sound levels by 1 and 7 NC respectively.

### GRAPHS SHOW AIR PATTERN AT VARIOUS DEFLECTION SETTINGS

"A" DEFLECTION —  $0^\circ$

"B" DEFLECTION —  $22\frac{1}{2}^\circ$

"C" DEFLECTION —  $45^\circ$



### VELOCITY LIMITATIONS

A prime factor in selecting the size grille is the velocity of the air passing through it. As the velocity increases, so does the noise level. We have listed below safe velocity limits for various applications.

The outlet velocities shown below are within safe, sound limits on most installations:

Broadcasting Studios .....	500 FPM
Residences, Apartments, Churches, Hotel Bedrooms .....	500 to 750 FPM
Legitimate Theaters, Private Offices with Soundproofing .....	500 to 1000 FPM
Motion Picture Theaters, Private Offices .....	1000 to 1250 FPM
General Offices .....	1250 to 1500 FPM
Stores .....	1500 FPM
Industrial Buildings .....	1500 to 2000 FPM



## ENGINEERING DATA - SIDEWALL SUPPLY GRILLES AND REGISTERS

SIZE	NC 20												30		40	
	Vel., Fpm	300	400	500	600	700	800	1000	1200	1400	1600	1800				
	Vel. Press.	.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202				
	Tot. Press	0	.010	.017	.028	.038	.052	.089	.107	.156	.211	.275	.349			
	22½	.011	.019	.031	.043	.058	.078	.120	.175	.237	.308	.392				
	45	.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590				

7 x 4 6 x 5 A <sub>s</sub> = .15 FPI	CFM	45	60	75	90	105	120	150	180	210	240	270	
	NC					13	17	23	29	34	38	41	
	Throw	0	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28	17-22-30
	22½		3-5-10	4-6-11	6-8-13	6-10-14	7-10-15	9-11-16	10-13-18	11-14-19	12-15-21	13-16-22	14-18-24
	Ft.	45	2-3-6	3-4-7	3-5-8	4-6-9	5-7-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-15

8 x 4 7 x 5 6 x 6 A <sub>s</sub> = .18 FPI	CFM	55	70	90	110	125	145	180	215	250	290	325	
	NC				10	15	19	25	31	36	40	43	
	Throw	0	4-7-13	6-8-15	7-11-17	9-13-19	10-15-20	11-16-22	14-17-24	15-19-26	17-21-29	18-22-31	19-24-33
	22½		3-6-10	5-6-12	6-9-14	7-10-15	8-12-16	9-13-18	11-14-19	12-15-21	14-17-23	14-18-25	15-19-26
	Ft.	45	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14	9-11-15	10-12-16

10 x 4 8 x 5 7 x 6 A <sub>s</sub> = .22 FPI	CFM	65	90	110	130	155	175	220	265	310	350	395	
	NC				10	15	19	25	31	36	40	43	
	Throw	0	4-7-14	7-10-17	8-12-19	9-15-21	11-16-23	13-17-24	16-19-27	17-21-29	19-23-32	20-25-34	21-26-36
	22½		3-6-11	6-8-14	6-10-15	7-12-17	9-13-18	10-14-19	13-15-22	14-17-23	15-18-26	16-20-27	17-21-29
	Ft.	45	2-4-7	3-5-9	4-6-10	5-7-10	6-8-11	6-9-12	8-10-13	9-11-15	9-12-16	10-12-17	11-13-18

12 x 4 10 x 5 8 x 6 A <sub>s</sub> = .26 FPI	CFM	80	105	130	155	180	210	260	310	365	415	470	
	NC				11	16	20	26	32	37	41	44	
	Throw	0	5-8-16	7-11-19	9-13-21	10-16-23	12-17-24	14-19-26	17-21-29	19-23-32	20-25-35	22-26-37	23-27-40
	22½		4-6-13	6-9-15	7-10-17	8-13-18	10-14-19	11-15-21	14-17-23	15-18-26	16-20-28	18-21-30	18-22-32
	Ft.	45	3-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	8-11-15	9-12-16	10-13-17	11-13-18	12-14-20

14 x 4 A <sub>s</sub> = .30 FPI	CFM	90	120	150	180	210	240	300	360	420	480	540	
	NC				11	16	20	26	32	37	41	44	
	Throw	0	5-9-17	8-11-20	9-14-22	11-17-24	13-19-26	15-20-28	18-23-31	20-25-34	22-27-37	24-29-40	25-30-42
	22½		4-7-14	6-9-16	7-11-18	9-14-19	10-15-21	12-16-22	14-18-25	16-20-27	18-22-30	19-23-32	20-24-34
	Ft.	45	3-4-8	4-6-10	5-7-11	6-8-12	7-9-13	8-10-14	9-11-16	10-12-17	11-13-19	12-14-20	12-15-21

16 x 4 12 x 5 10 x 6 A <sub>s</sub> = .34 FPI	CFM	100	135	170	205	240	270	340	410	475	545	610	
	NC				12	17	21	27	33	38	42	45	
	Throw	0	5-9-18	8-12-21	10-15-24	12-19-26	14-20-28	16-22-30	20-24-33	22-26-37	23-28-40	25-30-42	26-32-45
	22½		4-7-14	6-10-17	8-12-19	10-15-21	11-16-22	13-18-24	16-19-26	18-21-30	18-22-32	20-24-34	21-26-36
	Ft.	45	3-4-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-18	12-14-20	12-15-21	13-16-22

18 x 4 14 x 5 12 x 6 8 x 8 A <sub>s</sub> = .39 FPI	CFM	115	155	195	235	275	310	390	470	545	625	700	
	NC				13	18	22	28	34	39	43	46	
	Throw	0	6-9-19	9-13-23	11-16-25	13-19-28	15-22-30	17-23-32	21-26-36	23-27-40	25-30-42	27-33-45	28-35-48
	22½		5-7-15	7-10-18	9-13-20	10-15-22	12-18-24	14-18-26	17-21-29	18-22-32	20-24-34	22-26-36	22-28-38
	Ft.	45	3-5-10	4-6-11	5-8-13	7-10-14	8-11-15	9-12-16	11-13-18	12-14-20	12-15-21	13-16-23	14-17-24



## ENGINEERING DATA - SIDEWALL SUPPLY GRILLES AND REGISTERS

SIZE	Vel. Fpm	300	400	500	600	700	800	1000	1200	1400	1600	1800	
	Vel. Press.	.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202	
	Tot. Press.	0	.010	.017	.028	.038	.052	.069	.107	.156	.211	.275	.349
	45	.011	.019	.031	.043	.058	.078	.120	.175	.237	.308	.392	
		.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590	

34 x 6 24 x 8 20 x 10 16 x 12 14 x 14 A <sub>s</sub> = 1.18 F <sub>P</sub>	CFM	355	470	590	710	825	945	1180	1420	1650	1890	2120	
	NC			12	17	22	26	32	38	43	47	50	
	Throw	0	10-17-34	15-23-40	19-28-44	23-35-48	27-38-52	31-40-56	36-45-62	40-48-67	43-52-73	45-56-78	48-59-83
	22½	8-14-27	12-18-32	15-22-35	18-28-38	22-30-42	25-32-45	29-36-50	32-38-54	34-42-58	36-45-62	38-47-66	
Ft.	45	5-8-17	8-11-20	10-14-22	12-17-24	13-19-26	15-20-28	18-22-31	20-24-34	21-26-36	23-28-39	24-30-41	

60 x 4 48 x 5 36 x 6 18 x 12 16 x 14 A <sub>s</sub> = 1.34 F <sub>P</sub>	CFM	400	535	670	805	940	1070	1340	1610	1880	2140	2410	
	NC			13	18	23	27	33	39	44	48	51	
	Throw	0	11-18-36	16-24-42	20-30-47	24-37-51	28-40-56	32-43-59	39-47-65	42-52-72	45-56-78	48-60-83	51-63-89
	22½	9-14-29	13-19-34	16-24-38	19-30-41	22-32-45	26-34-47	31-38-52	34-42-58	36-45-62	38-48-66	41-50-71	
Ft.	45	6-9-18	8-12-21	10-15-23	12-18-25	14-20-28	16-21-29	19-23-33	21-26-36	23-28-39	24-30-42	26-32-44	

72 x 4 30 x 8 24 x 10 22 x 12 18 x 14 16 x 16 A <sub>s</sub> = 1.60 F <sub>P</sub>	CFM	480	640	800	960	1120	1280	1600	1920	2240	2560	2880	
	NC			13	18	23	27	33	39	44	48	51	
	Throw	0	13-20-40	18-26-46	22-32-51	27-39-56	31-43-60	35-46-64	42-51-72	46-56-79	49-61-85	53-65-91	56-69-97
	22½	10-16-32	14-21-37	18-26-41	22-31-45	25-34-48	28-37-51	34-41-58	37-45-63	39-49-68	42-52-73	45-55-78	
Ft.	45	6-10-20	9-13-23	11-16-25	13-20-28	15-22-30	17-23-32	21-26-36	23-28-39	25-30-43	26-32-46	28-35-48	

60 x 5 48 x 6 36 x 8 30 x 10 24 x 12 20 x 14 18 x 16 A <sub>s</sub> = 1.80 F <sub>P</sub>	CFM	540	720	900	1080	1260	1440	1800	2160	2520	2880	3240	
	NC			14	19	24	28	34	40	45	49	52	
	Throw	0	13-21-42	19-28-48	24-35-55	29-43-59	32-46-63	37-49-68	45-55-76	48-60-84	52-65-90	56-69-97	60-73-103
	22½	10-17-34	15-22-38	19-28-44	23-34-47	26-37-50	30-39-54	36-44-61	38-48-67	42-52-72	45-55-78	48-58-82	
Ft.	45	7-11-21	9-14-24	12-17-27	14-21-29	16-23-32	19-24-34	22-27-38	24-30-42	26-32-45	28-35-48	30-37-51	

72 x 5 60 x 6 40 x 8 36 x 10 30 x 12 24 x 14 20 x 16 18 x 18 A <sub>s</sub> = 2.08 F <sub>P</sub>	CFM	625	830	1040	1250	1460	1660	2080	2500	2910	3330	3740	
	NC			14	19	24	28	34	40	45	49	52	
	Throw	0	14-23-45	20-30-52	26-38-58	30-44-63	35-49-68	40-53-73	48-59-82	52-64-90	56-69-97	60-75-104	64-79-110
	22½	11-18-36	16-24-42	21-30-46	24-35-50	28-39-54	32-42-58	38-47-66	42-51-72	45-55-78	48-60-83	51-63-88	
Ft.	45	7-11-23	10-15-26	13-19-29	15-22-32	17-25-34	20-36-37	24-29-41	26-32-45	28-35-48	30-37-52	32-40-55	

72 x 6 48 x 8 32 x 12 26 x 14 24 x 16 20 x 18 20 x 20 A <sub>s</sub> = 2.45 F <sub>P</sub>	CFM	735	980	1220	1470	1720	1960	2450	2940	3430	3920	4410	
	NC			15	20	25	29	35	41	46	50	53	
	Throw	0	15-25-49	22-33-57	27-40-62	32-48-68	38-54-74	43-57-80	52-64-89	57-70-97	61-76-106	65-81-113	70-87-120
	22½	12-20-39	18-26-46	22-32-50	26-38-54	30-43-59	34-46-64	42-51-71	46-56-78	49-61-85	52-65-90	56-70-96	
Ft.	45	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-28-40	26-32-45	28-35-49	32-38-53	33-42-56	35-43-60	

36 x 12 30 x 14 26 x 16 24 x 18 22 x 20 A <sub>s</sub> = 2.78 F <sub>P</sub>	CFM	835	1110	1390	1670	1950	2220	2780	3340	3890	4450	5000	
	NC			16	21	26	30	36	42	47	51	54	
	Throw	0	16-26-52	23-34-60	29-42-67	35-50-73	40-57-79	45-61-85	55-68-95	60-75-104	65-81-112	70-87-122	74-93-128
	22½	16-21-42	18-27-48	23-34-54	28-40-58	32-46-63	36-49-68	44-54-76	48-60-83	52-65-90	56-70-98	59-74-102	
Ft.	45	8-13-26	12-17-30	14-21-33	17-25-37	20-28-40	23-30-42	28-34-47	30-37-52	33-40-56	35-43-61	37-46-64	

NC 20

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