



CONTROL VALVE STANDARD SPECIFICATION

BUTTERFLY VALVE



YABB- Series



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PROVAL Co., Ltd.

[D-2]

PROVAL

PNEUMATIC BUTTERFLY VALVES

GENERAL

The wafer butterfly valve is much smaller than other valve designs. The results are savings in materials, less weight, small space requirement, and ease of installation and operation. Wafer construction provides maximum strength under conditions of pipeline strain. Less torque, less time for opening (closing), compact, maintenance-free, bubble tight seal, long life, reliable performance and less cost for these entire outstanding features-this is butterfly valve.

The resilient seat of the butterfly valve performs several functions; forms a drop-tight seal with the disc, serves as the gasket between the flange and valve faces, and isolates the valve components from the flowing media. The result is rugged simple construction and little or no maintenance.



FEATURES

- COMPACT SIZE & LIGHT WEIGHT
- LONG SERVICE LIFE & LOWER COST
- SIMPLE INSTALLATION & MAINTENANCE
- PNEUMATIC CONTROL OPERATION
- PERFECT CUT OFF
- VERSATILE FUNCTION
- WIDE APPLICATION

• SAVE 8-WAYS WITH BUTTERFLY VALVES

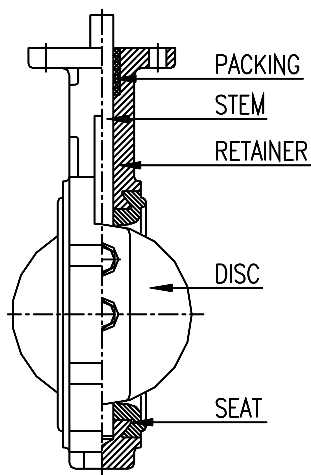
- ① **Initial Cost** – Lower than equivalent gate, globe, ball, plug valves. Enveloping seat means economical body & shaft materials can be used.
- ② **Installation** – Compact size lightweight and flange locating holes drilled to flange specification required bring new ease of valve installation.
- ③ **Space** – 1/6th the space of an equivalent cast iron gate, ball, globe, plug valve
- ④ **Weight** – 1/11th the weight of an equivalent cast iron other valves.
- ⑤ **Maintenance** – Simple construction means "Install it and forget it" service. Free service
- ⑥ **Protection** – Body and shaft are completely protected from line media by the seat. Rugged construction means trouble-free service.
- ⑦ **Investment** – The increasing trend to butterfly valves means freedom from obsolescence.
- ⑧ **Versatility** – Same valves may be used for on-off or throttling control. Wide choice of manual. Pneumatic, electric, and hydraulic actuators and Accessories fill every requirement.

STANDARD SPECIFICATION

Model No.		YABB-122C1,112C1 Series (Single Action Type), YABB-322C1,312C1 Series (Double Action Type)																									
Valve Type		Pneumatic rotary cylinder actuator operated butterfly																									
BODY	Valve Size	(mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
		(inch)	2	2½	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	44	48
	Pressure Rating	ANSI 150# / JIS 10K / JPI 150# / DN 6bar ~ 10bar (※ JIS 10K)																									
	End Connections	WAFER, R.F , LUG																									
	Body Materials	A126-CLASS A/B/C, A395, A216-WCB ※ A351-CF8, CF8M																									
	Operating Temperature	-30°C ~ +120°C																									
	Gland Packing	PTFE																									
	Bonnet	Standard type																									
	Flow Direction	Direct																									
PERFORMANCE	Valve Action	Reverse action, Direct action																									
	Rated Cv Value	See "Cv value & Chart" page 4																									
	Working Pressure	Max. 16kgf/cm ² (JIS 10K, PN 10, ANSI 150#)																									
	Allowable Seat Leakage Ratio	ANSI B16. 104 Class VI (Leakage zero)																									
ACTUATOR	Model	B0S(R) ~ R10S																									
	Actuator Type	Pneumatic rotary cylinder type actuator																									
	Cylinder Diameter (Ø)	Ø55 ~ Ø330																									
	Operating Angle	0° ~ 90°																									
	Supply Air Pressure kPa (kgf/cm ² G)	Double Action : 400 ~ 700 (4.0 ~ 7.0)																									
		Spring Return : 500 ~ 700 (5.0 ~ 7.0)																									
	Ambient Temperature	-10°C ~ +70°C (※ 0°C ~ +100°C)																									
	Painting Color	Standard is Blue.																									
Accessory	Solenoid Valve, Air-set, Speed Controller, Lock-up valve, Limit Switch & Box, Booster relay, Proximity Switch, Silencer, Manual handle, etc.																										

[Notes] (1) Valve performance is represented under the condition of standard packing (N.B.R.).
 (2) ※ : Manufactured and attached as according to customer's order.

CONSTRUCTION



Part name	Design construction
Body	Valve available with both wafer and lug type bodies Fully lined body in a broad range of materials-including Teflon.
Disc	Thru-shaft design provides high strength and absolutely positive disc control and gives minimum obstruction to flow. Special self-locking disc screws for maximum torque capacity allow quickly and east disassemble.
Stem	One piece turf-stem design ensures dependability and positive disc control.
Seat	Famous dovetail seat retention eliminates the need for bonding seat to valve, enables easy replacement, and isolates the body and stem from the flow.
Packing	Heavy duty top bushing absorbs side thrust loads.

MATERIAL DATA

1. Combining the Butterfly Body and trim materials

Parts Name		Materials
Body, Bonnet		Cast Iron (A126-CLASS A/B/C), Ductile Iron (A395,536) Carbon Steel (A216-WCB), Stainless Steel (A351-CF8, CF3), etc.
Trim	Disc	Stainless Steel (A351-CF8, CF3), Aluminum – Bronze Ductile iron W/Monet Edge, Teflon Covered, Buna – N Covered
	Seat	Buna – N, EPDM, Teflon & Buna – N, PTFE
	Stem	STAINLESS STEEL (SUS304, SUS316)
Bushing		Acetyl Copolymer
Packing		PTFE
Screws (Disc)		Stainless steel

2. Disc & Seat operating Temperature – Pressure rating

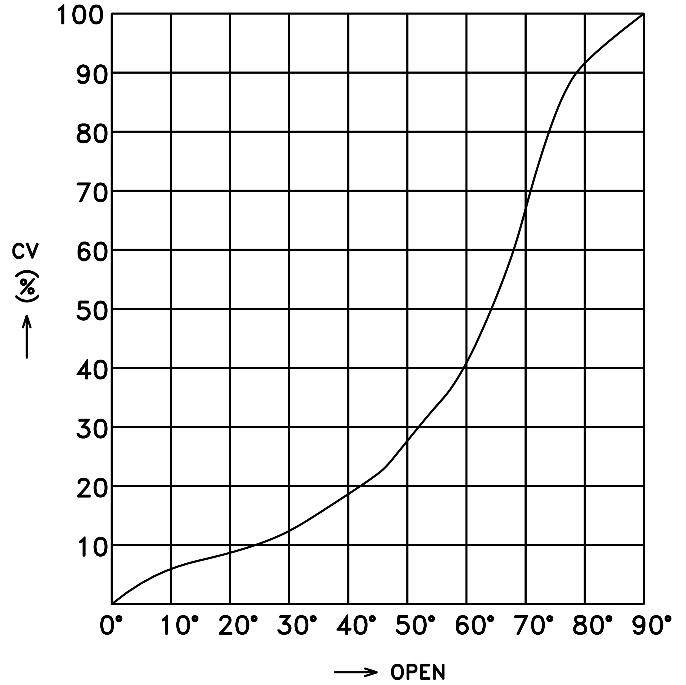
Disc material	Seat material	Pressure rating (Bar)	Temperature range (°C)
Stainless steel (A351-CF8, CF3)	Buna – N	10	0 to 100°C
Stainless steel (A351-CF8, CF3)	EPDM	10	-30 to 121°C
Stainless steel (A351-CF8, CF3)	Teflon & Buna – N	10	0 to 121°C
Teflon (Covered)	Teflon & Buna – N	7	0 to 121°C
Buna – N (Covered)	Buna – N	7	0 to 100°C
EPDM (Covered)	EPDM	7	-30 to 121°C

Cv Value & Chart

1. Cv Value

Size (mm)	Cv	Size (mm)	Cv	Size (mm)	Cv
50	165	400	12500	900	70100
65	250	450	16100	950	79500
80	380	500	19500	1000	81200
100	650	550	22900	1100	95200
125	1100	600	29300	1200	113400
150	1790	650	34290		
200	3300	700	41720		
250	5400	750	47000		
300	7830	800	56200		
350	10300	850	65000		

2. Cv Chart



APPLICATION OF ACTUATOR

1. Cylinder Actuator: B0S(R) ~ R10S (RA, DA)

Valve size \ Actuator	Valve size																									
	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")	350 (14")	400 (16")	450 (18")	500 (20")	550 (22")	600 (24")	650 (26")	700 (28")	750 (30")	800 (32")	850 (34")	900 (36")	950 (38")	1000 (40")	1100 (44")	1200 (48")	
B0S	○	○	△																							
B0SR	○	△																								
B1S			○	○	△																					
B1SR		○	○	△																						
B2S					○	○	△																			
B2SR				○	○	△																				
B3S							○	○	△																	
B3SR						○	○	△																		
B4S									○	△																
B4SR								○	△																	

[NOTE] ○ → MAX 10Kg/cm²Pressure, △ → MAX 3Kg/cm²Pressure

Valve size Actuator	Valve size																								
	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")	350 (14")	400 (16")	450 (18")	500 (20")	550 (22")	600 (24")	650 (26")	700 (28")	750 (30")	800 (32")	850 (34")	900 (36")	950 (38")	1000 (40")	1100 (44")	1200 (48")
B6S									○	○	△														
B6SR								○	△																
R6S										○	○	△													
R6SR								○	○	△															
R7S													○	○	○	○	△								
R7SR											○	○	○	△											
R8S																		○	○	○	○	△			
R8SR															○	○	○	○	△						
R9S																						○	○	△	
R10S																								○	○

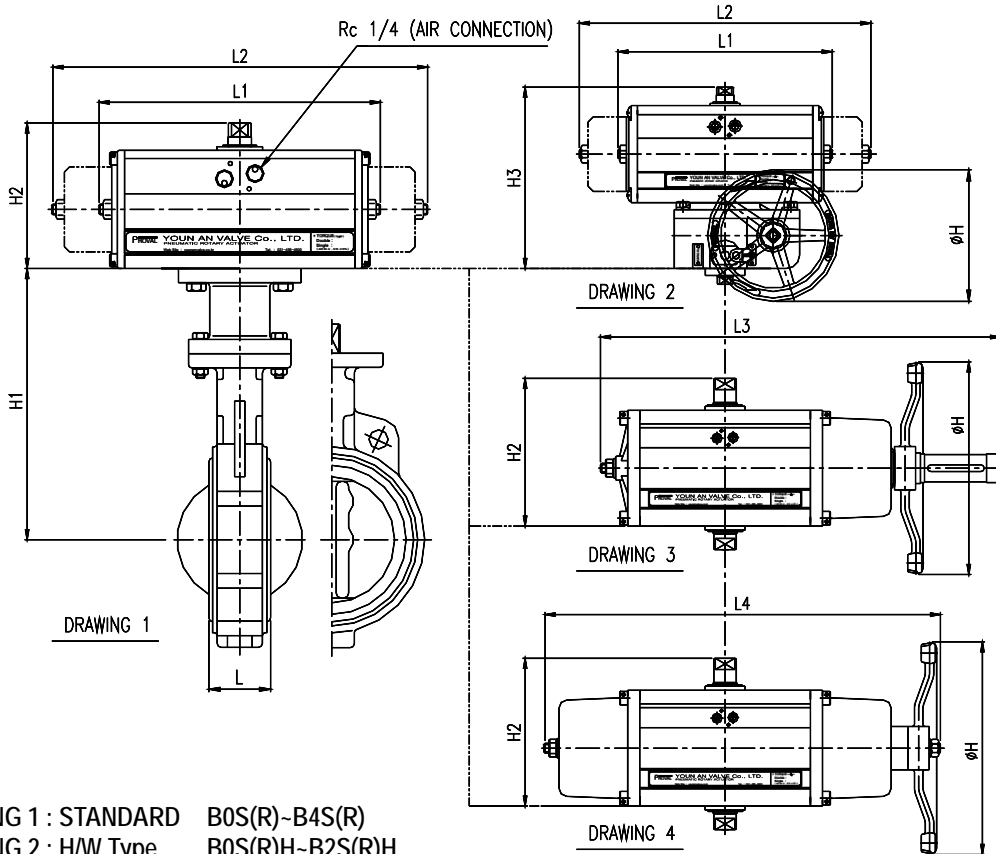
[NOTE] ○ → MAX 10Kg/cm²Pressure, △ → MAX 3Kg/cm²Pressure

WEIGHT

Size (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	
Actuator Model Rating	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	JIS 10K, ANSI 150#	
B0S(R)	7 (8)	9 (10)																								
B1S(R)		11 (13)	14 (16)	17 (23)	23 (28)																					
B2S(R)				28 (33)	38 (42)																					
B3S(R)					50 (53)	63 (70)	76 (84)	86 (94)	100 (105)																	
B4(R)									102 (114)	102 (113)	115 (123)															
B6S(R)										125 (140)	155 (170)	180 (193)														
R6S(R)												230 (255)	335 (370)	405 (445)												
R7S(R)													445 (470)	540 (590)	700 (800)	750 (820)										
R8S(R)																			850 (930)	1100 (1200)	1300 (1400)	1400 (1580)	1650 (1850)			
R9S																							1700	1900	2200	
R10S																									2400	3000

DIMENSION DRAWING

ACTUATOR : B0S(R)(H)~B6S(R)(H)



- NOTE.
- * DRAWING 1 : STANDARD B0S(R)~B4S(R)
 - * DRAWING 2 : H/W Type B0S(R)H~B2S(R)H
 - * DRAWING 3 : H/W Type B3SH, B4SH
 - * DRAWING 4 : H/W Type B3SRH, B4SRH

DIMENSIONS

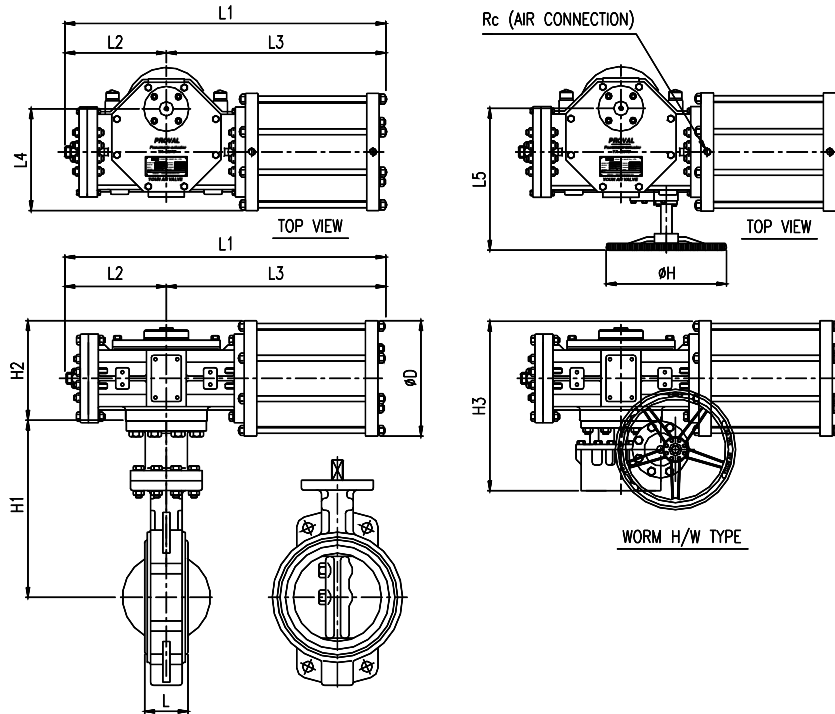
[Unit: mm]

Valve Size		L (JIS 5K, 10K /ANSI 125#, 150#)	ACTUATOR				H1	H2		H3		ØH	
mm	Inch		Double Action		Single Action			D	S	D	S	D	S
			Model No.	L1 / L3	Model No.	L2 / L4							
50	2	41	B0S	170 / -	B0SR	270 / -	237	79	79	155	155	200	200
65	2½	44	B0S	170 / -	B1SR	340 / 385	240	79	111	155	186	200	200
80	3	44	B1S	215 / 355	B1SR	340 / 385	245	111	111	186	186	200	200
100	4	51	B1S	215 / 355	B2SR	405 / 510	270	111	131	186	206	200	200
125	5	54	B2S	250 / 475	B2SR	405 / 510	280	131	131	206	206	200	200
150	6	54	B2S	250 / 475	B3SR	560 / 640	320	131	184	206	355	200	315
200	8	64	B3S	310 / 600	B3SR	560 / 640	370	184	184	355	355	315	315
250	10	64	B3S	310 / 600	B4SR	610 / 725	420	184	184	355	355	315	315
300	12	76	B4S	400 / 700	B6SR	700 / 955	440	184	256	355	440	315	315
350	14	76	B6S	475 / 830	B6SR	700 / 955	500	256	256	440	440	315	315

MODEL	YABB - 122C1, 112C1 Series YABB - 322C1, 312C1 Series	SIZE	50A ~ 350A
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DIMENSION DRAWING

ACTUATOR : R6S(H)~R10S(H)



DIMENSIONS

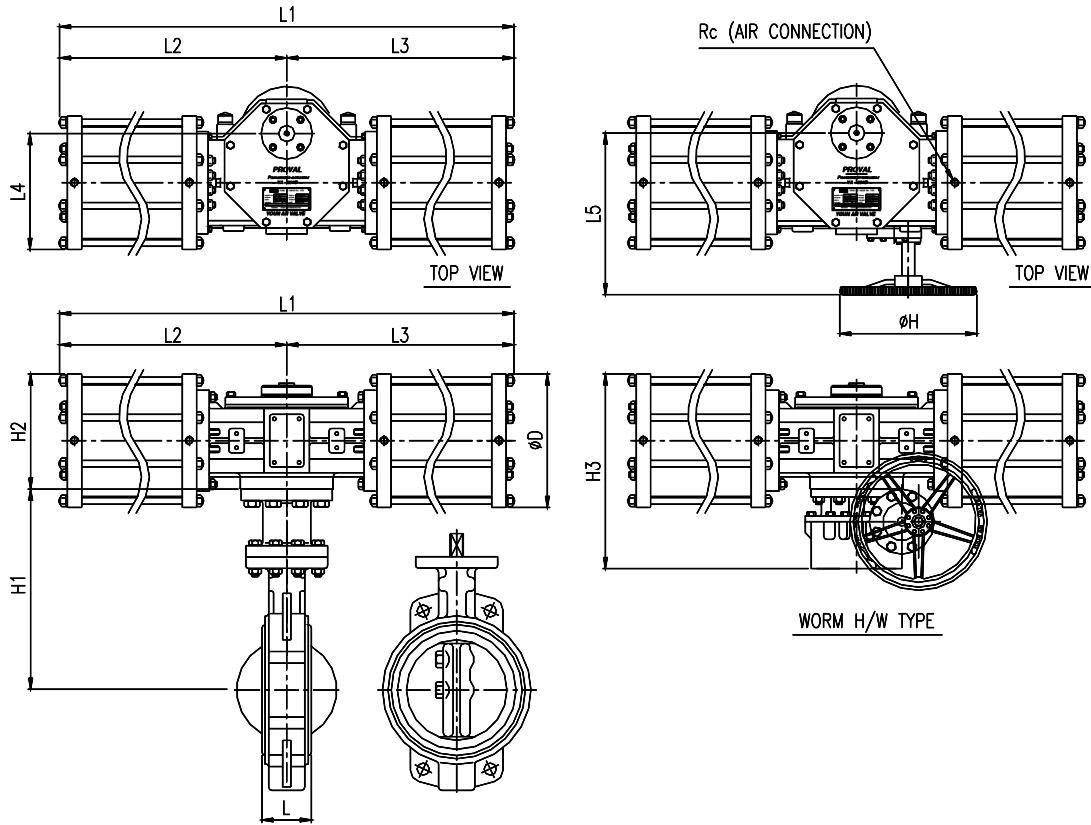
[Unit: mm]

Valve Size		L JIS 5K, 10K ANSI 125#, 300#	ACTUATOR			L2	L3	L4	L5	H1	H2	H3	ØH	Rc
mm	inch		Model No.	L1	ØD									
350	14	76	R6S	750	270	235	515	190	603	500	190	440	430	3/8
400	16	102	R6S	750	270	235	515	190	603	530	190	440	430	3/8
450	18	108	R6S	750	270	235	649	240	623	550	240	490	430	3/8
500	20	127	R6S	750	270	235	649	240	623	580	240	490	430	3/8
550	22	-	R7S	940	270	291	649	255	638	630	255	505	430	3/8
600	24	150	R7S	940	270	291	649	255	638	705	255	505	430	3/8
650	26	-	R7S	940	270	291	649	255	638	725	255	505	430	3/8
700	28	170	R7S	940	270	291	649	255	638	780	255	505	430	3/8
750	30	-	R8S	940	325	291	649	283	638	800	283	533	430	3/8
800	32	190	R8S	940	325	291	649	283	638	860	283	533	430	3/8
850	34	-	R8S	940	325	291	649	283	638	890	283	533	430	3/8
900	36	199	R8S	940	325	291	649	283	638	920	283	533	430	3/8
950	38	-	R9S	940	390	291	649	315	638	-	315	565	430	1/2
1000	40	-	R9S	940	390	291	649	315	638	-	315	565	430	1/2
1100	44	-	R10S	940	420	291	649	330	638	-	330	580	430	1/2
1200	48	-	R10S	940	420	291	649	330	638	-	330	580	430	1/2

MODEL	YABB - 122C1, 112C1 Series YABB - 322C1, 312C1 Series	SIZE	350A ~ 1200A
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DIMENSION DRAWING

ACTUATOR : R6SR(H)~R8SR(H)



DIMENSIONS

[Unit: mm]

Valve Size		L JIS 5K, 10K ANSI 125#, 300#	ACTUATOR			L2	L3	L4	L5	H1	H2	H3	ØH	Rc
mm	inch		Model No.	L1	ØD									
300	12	76	R6SR	1450	210	515	515	240	623	401	240	490	430	3/8
350	14	76	R6SR	1450	270	515	515	240	623	453	240	490	430	3/8
400	16	102	R6SR	1450	270	515	515	240	623	491	240	490	430	3/8
450	18	108	R6SR	1450	270	820	820	240	623	542	240	490	430	3/8
500	20	127	R6SR	1950	270	820	820	240	623	580	240	490	430	3/8
550	22	142	R7SR	1950	270	820	820	255	638	-	255	505	430	3/8
600	24	150	R7SR	1950	325	820	820	255	638	-	283	533	430	3/8
650	26	170	R7SR	1950	325	820	820	255	638	-	283	533	430	3/8
700	28	170	R7SR	1950	325	820	820	255	638	-	283	533	430	3/8
750	30	167	R8SR	1950	325	820	820	283	638	-	283	533	430	3/8
800	32	190	R8SR	1950	325	820	820	283	-	-	283	533	430	3/8

MODEL	YABB - 122C1, 112C1 Series YABB - 322C1, 312C1 Series	SIZE	300A - 800A
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