

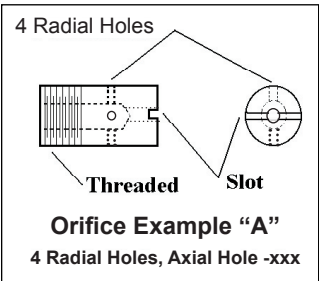


Gas Orifice Part Number and Description

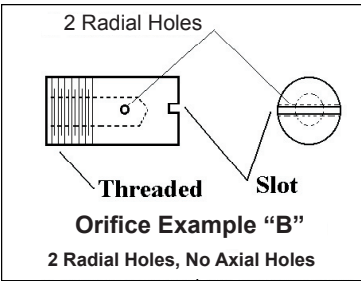
Part No.	Description	Sketch Example	Where Used	
			Burner	Vessel
090002	Gas orifice, 5/16" brass blank, no holes			
090002-076	Gas orifice, 5/16" brass, (2) radial #48 holes, no axial hole (48 x 2)	B	JB	FB
090002-098	Gas orifice, 5/16" brass, (2) radial #40 holes, no axial hole (40 x 2)	B	JB	FB
090054-xxx	Gas orifice, 5/16" brass, no radial holes, (1) axial hole (xxx = hole dia.)	E	JB	FB, SF
090055-xxx	Gas orifice, 5/16" steel, no radial holes, (1) axial hole (xxx = hole dia.)	E		
090069-xxx	Gas orifice, 5/16" brass, (4) #40 radial holes, (1) axial hole (xxx = hole dia.) (40 x 4 x ___)	A	JB	FB, SF
090182	Orifice extension, 3/8" pipe x 3" long	D	HD	
090183	Orifice extension, 1/2" pipe x 6" long	D	HD	
090184-xxx	Gas orifice, 5/16" steel, (4) #40 radial holes, (1) axial hole (xxx = hole dia.) (40 x 4 x ___)	A		
090185-000	Gas orifice, 5/16" steel blank, no radial or axial holes			
090185-098	Gas orifice, 5/16" steel, (2) radial #40 holes, no axial hole (40 x 2)	B		
090193	Gas orifice, 5/16" brass, (1) #40 radial hole, (1) axial #26 hole (40 x 1 x 26)	C	HD	FB, SF
090227-xxx	Gas orifice, 5/16" brass, (4) #48 radial holes, (1) axial hole (xxx = hole dia.) (48 x 4 x ___)	A		
090284-xxx	Gas orifice, 1/4" steel, no radial holes, (1) axial hole (xxx = hole dia.)	E		
090287	Orifice extension, 5/16" OD steel tube, 1.188" long	D		
090288	Orifice extension, 5/16" OD steel tube, 2.75" long	D		
090291-xxx	Gas orifice, 9/16" steel, (1) axial hole (xxx = hole dia.)	E	HD	FB
090318	Orifice extension, 5/16" OD brass tube, 1.188" long	D	JB	SF
090319	Orifice extension, 5/16" OD brass tube, 2.75" long	D		
090330-xxx	Gas orifice, 3/8" hex head brass plug, (1) axial hole (xxx = hole dia.)	F	HD	SF
OT (open tube)	No orifice used (If no orifice part number given in BOM, assume OP)			

- Note:**
- Part numbers ending in "-xxx" use the drilled hole diameter as the last three digits, or the "-xxx". A number 40 drill would be "-098".
 - Part numbers ending in "000" indicate no drilled hole.
 - Sketches show general appearance only, not number or type of holes.
 - Tertiary orifices are closest to the center of the head on the HDRV and secondary orifices are closest to the JB burner.

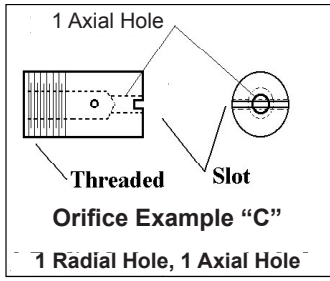
FB = Firebox
 SF = Scotch Firetube
 HD = HD Burner
 JB = JB Burner



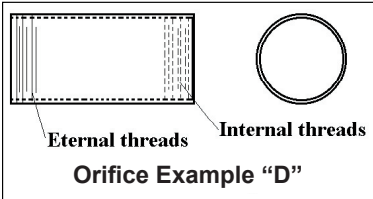
If the radial drill size is a # 40 drill, this would be called a "40 by 4" orifice, which is common in the JB burner line.



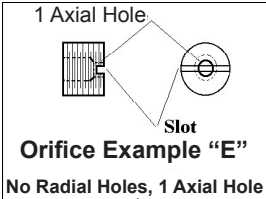
If the radial drill size is a # 40 drill, this would be called a "40 by 2" orifice, which is common in the JB burner line.



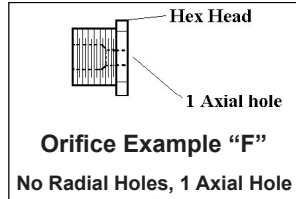
If the radial drill size is a # 40 drill and axial hole a # 48 drill, this would be called a "40 by 2 x 48" orifice.



Extensions are used to move the orifice out. The orifice screws into the extension. These are commonly used on JB burners in scotch firetubes.



The threads run the full length of the orifice. This orifice cannot have radial holes.



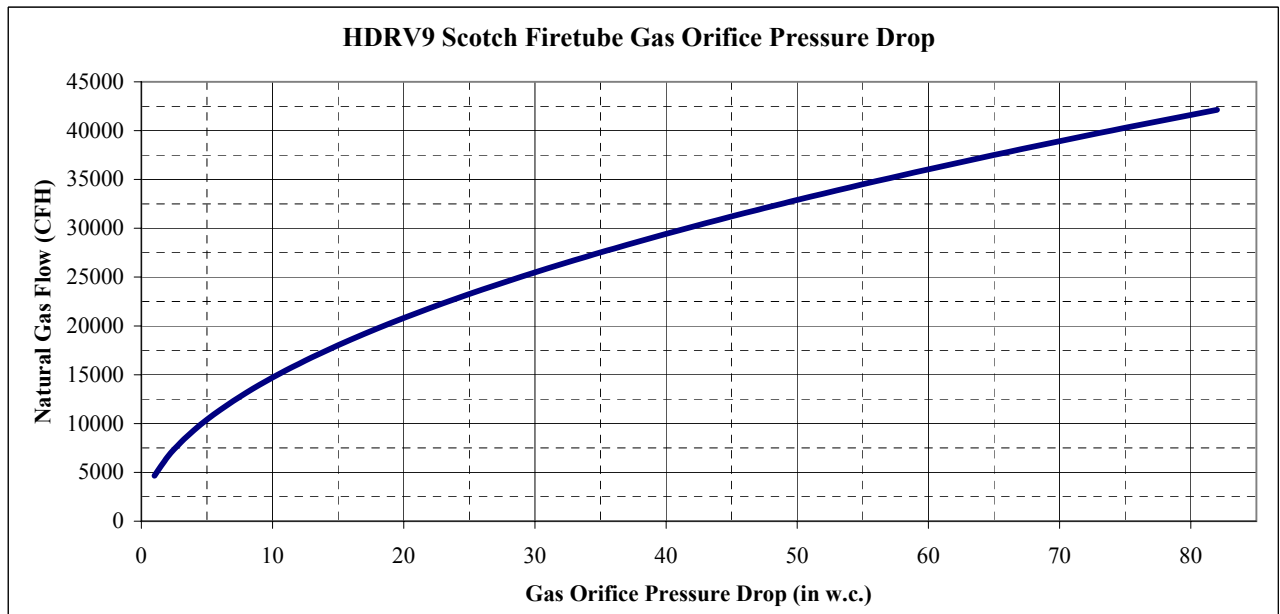
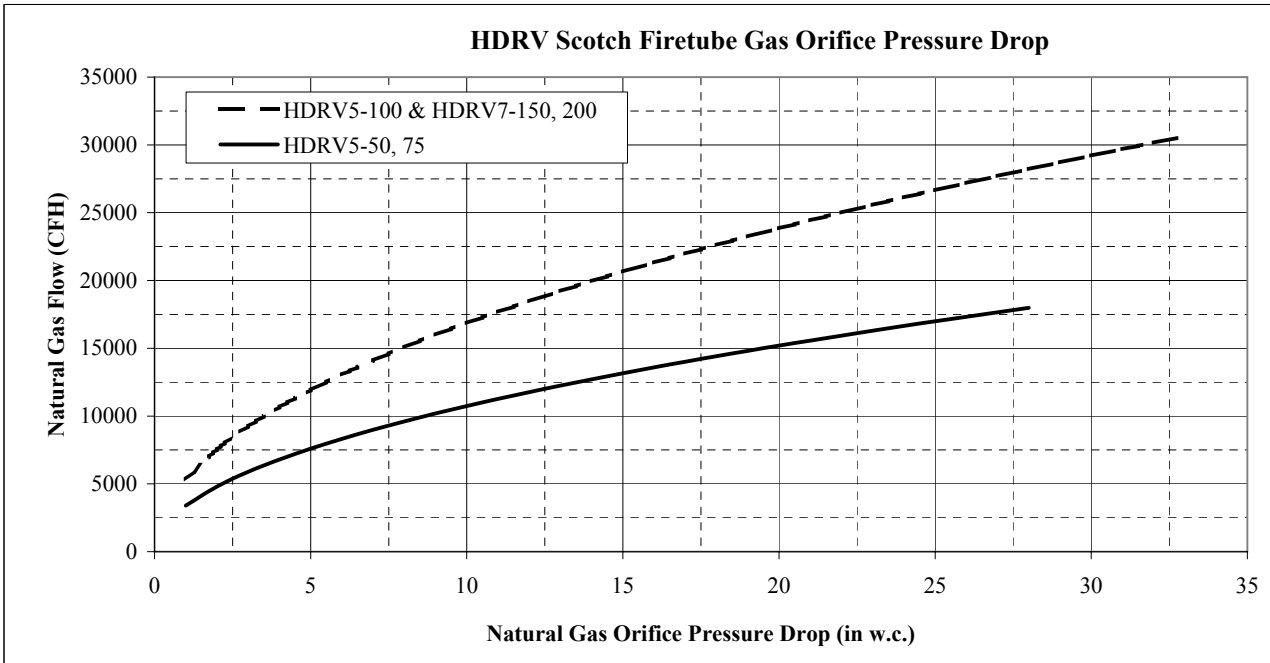
This is a hex head pipe plug with a single axial hole drilled through the center.

Model HDRV Scotch Firetube boiler Orifice Arrangements

Please help us welcome Nathan to our team.

4-23-04

Burner	Comments	Primary Orifices		Secondary Orifices		Tertiary Orifices	
		Qty	Part No.	Qty	Part No.	Qty	Part No.
HDRV5-50, -75	HD5 w/13" head	24	90193	7	Open Tube	6	090291-250
HDRV5-100	HD5 w/ 15" head	24	90193	14	Open Tube	7	090291-250
HDRV7-150, 200	HD7 w/ 17" head	24	90193	14	Open Tube	7	090291-250
HDRV9	HD9 w/ 19" head	30	90193	12	090330-375	12	090291-250

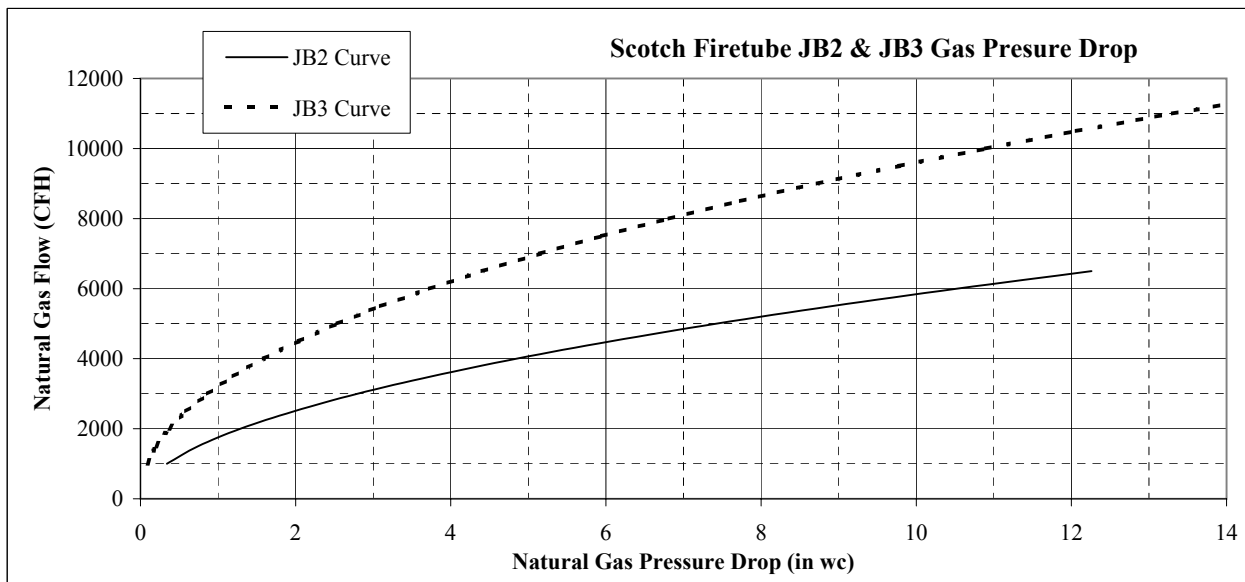
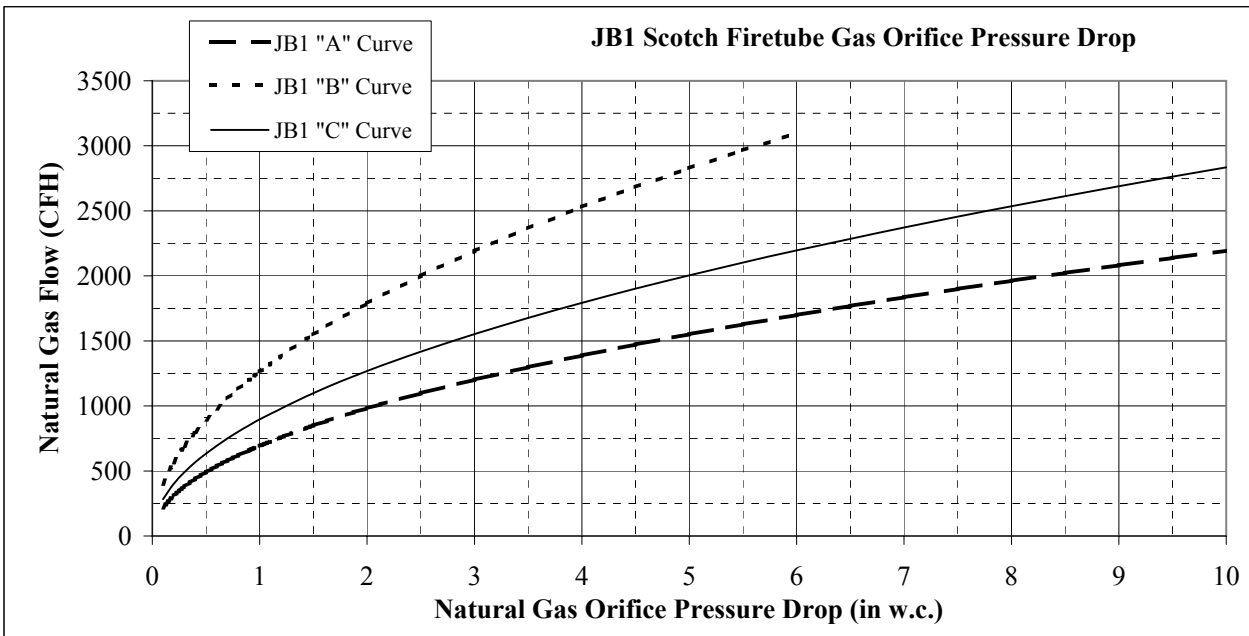


- Notes
1. The orifice selection given is represents the typical application. Specific job conditions may require different arrangements.
 2. Application tests have ben performed on some units, and optimal orifice arrangements selected that may be different from above.
 3. Pressure drop is approximate. Furnace pressure not included. Diffuser position can change pressure.

Model JB Scotch Firetube boiler Orifice Arrangements

4-23-04

Burner	Comments	Primary Orifices				Secondary Orifices				Pressure Curve
		Qty	Part No.	Qty	Part No.	Qty	Part No.	Qty	Part No.	
JB1-02	JB1 Scotch	5	90318	5	090069-000	5	0900054-147			JB1 "A"
JB1-03 to 07	For larger furnaces (>13" ID)	10	90318	10	090069-000	10	090054-171			JB1 "B"
	For 13" ID furnace	10	90318	10	090069-000	5	090054-171	5	090054-171	JB1 "C"
JB2	JB2 Scotch	15	90318	15	090069-000	15	090054-171			JB2
JB3	JB3 Scotch	24	90318	24	090069-000	24	090054-171			JB3

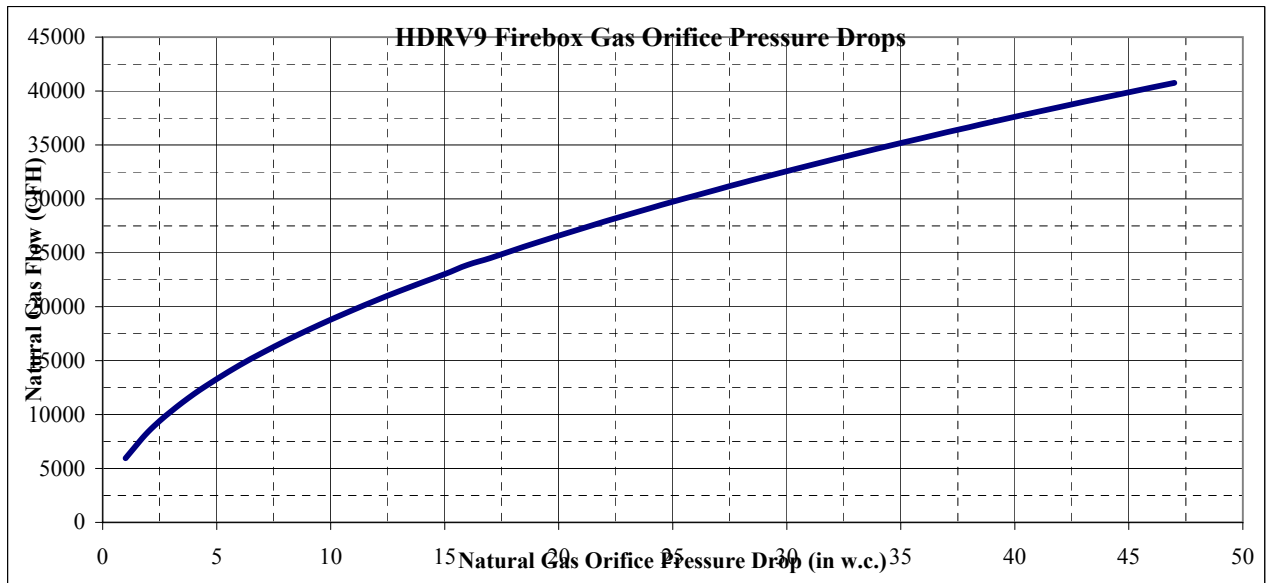
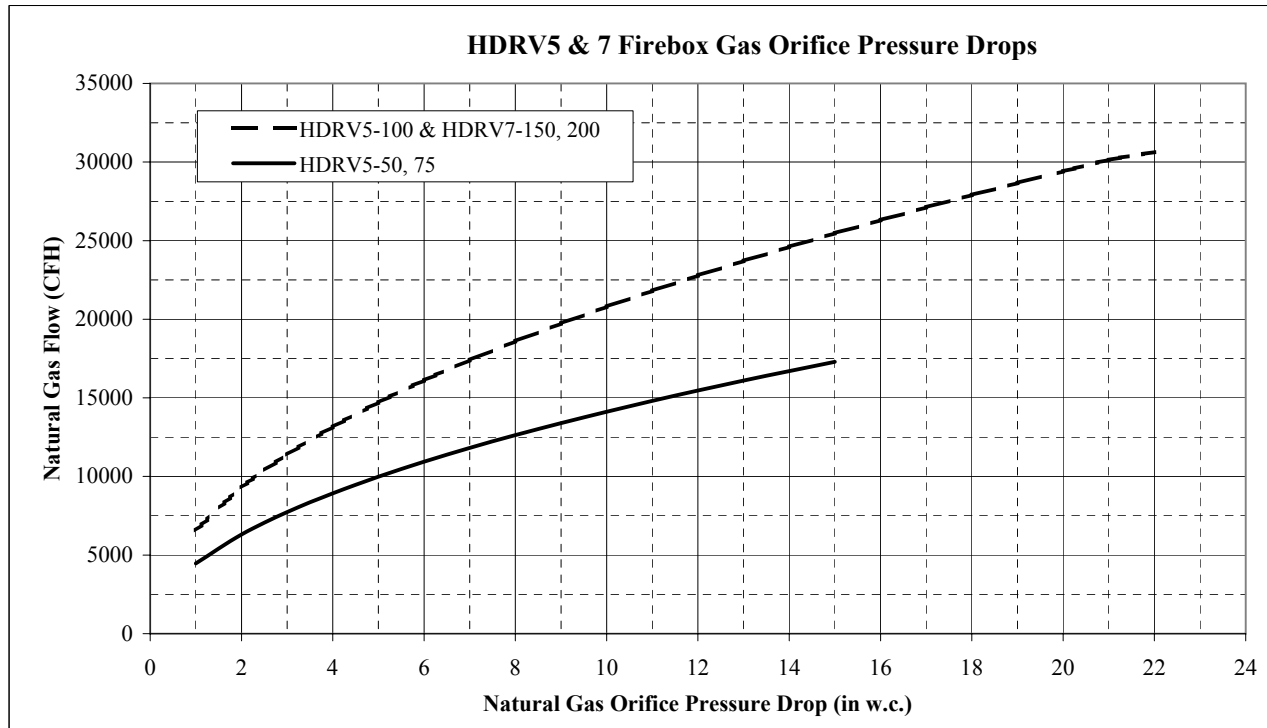


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Model HDRV Firebox & Watertube boiler Orifice Arrangements

4-23-04

Burner	Comments	Primary Orifices		Secondary Orifices		Tertiary Orifices		Pressure Curve
		Qty	Part No.	Qty	Part No.	Qty	Part No.	
HDRV5-50, -75	HD5 w/13" head	24	90193	7	Open Tube	6	Open Tube	A
HDRV5-100	HD5 w/ 15" head	24	90193	14	Open Tube	7	Open Tube	B
HDRV7	HD7 w/ 17" head	24	90193	14	Open Tube	7	Open Tube	B
HDRV9	HD9 w/ 19" head	30	90193	12	090330-375	12	090291-375	HDRV9

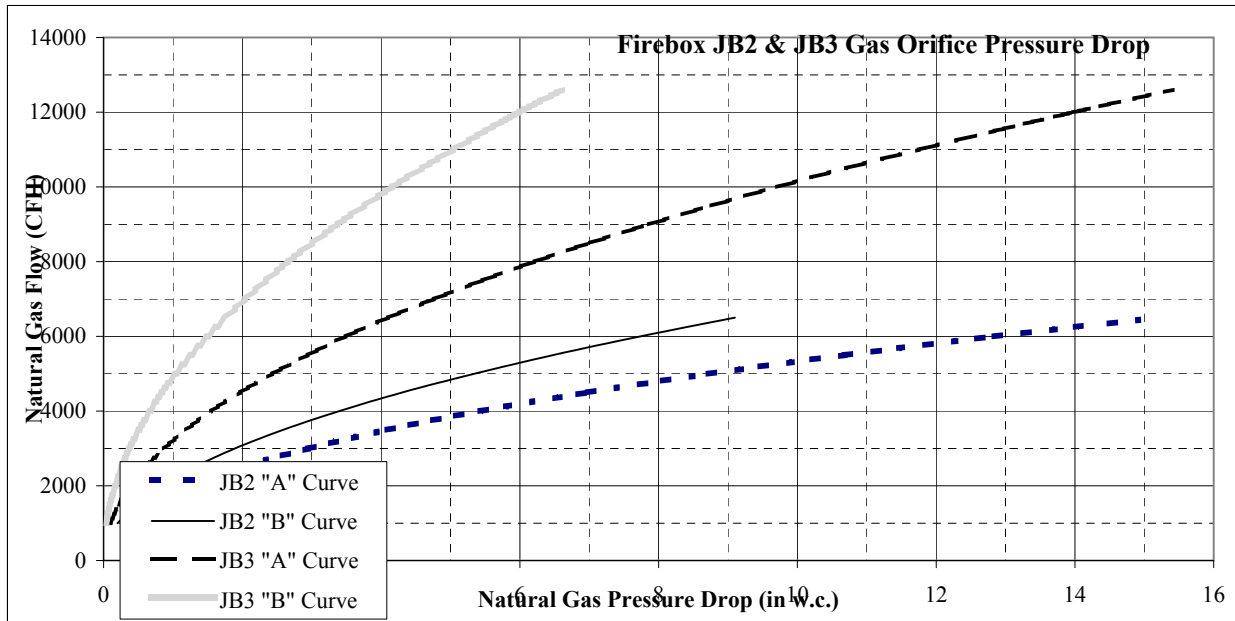
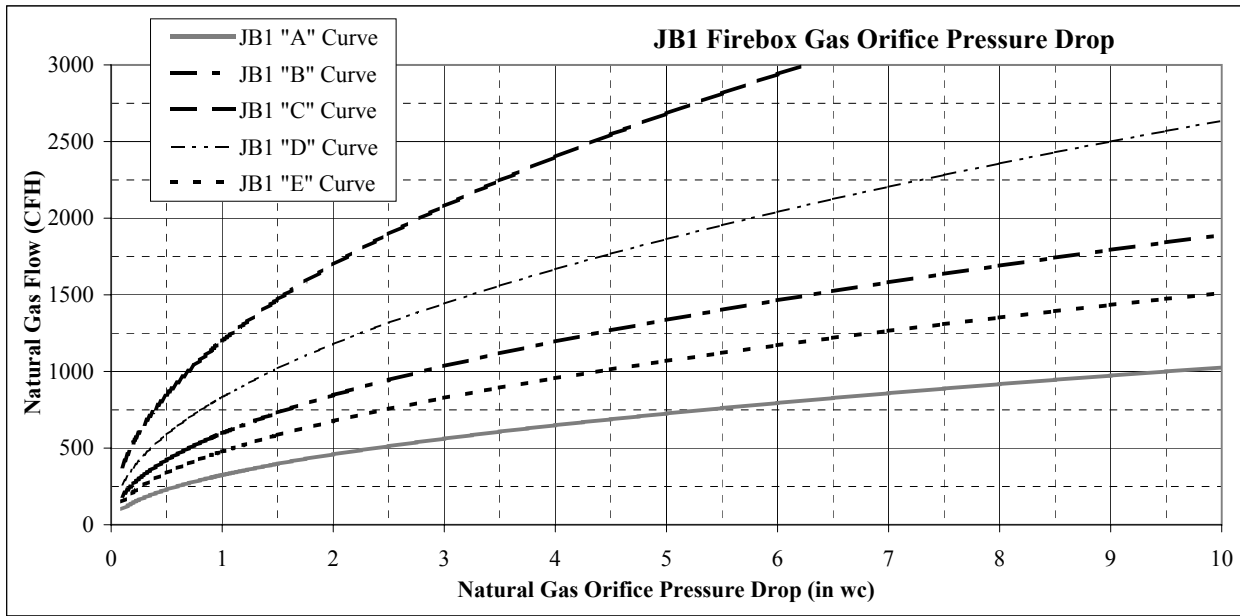


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Model JB Firebox & Watertube boiler Orifice Arrangements

4-23-04

Burner	Comments	Primary		Secondary		Pressure Curve
		Qty	Part No.	Qty	Part No.	
JB1-02	400 MBH to 650 MBH	10	090002-98	5	090054-147	JB1 "A"
	650 MBH to 1000 MBH	10	090069-000	5	090054-147	JB1 "E"
JB1-03 to 07	1000 MBH to 1200 MBH	20	090002-98	10	090054-147	JB1 "B"
	1600MBH to 2500 MBH	20	090069-128	10	Open Tube	JB1 "C"
	1200 MBH to 1600 MHB	20	090069-000	10	090054-147	JB1 "D"
JB2	To 4500 MBH	30	090069-187	15	090054-147	JB2 "A"
	4501 MBH to 6000 MBH	30	090069-098	15	090054-147	JB2 "B"
JB3	Full Range	48	090069-187	24	090054-187	JB3 "A"
	See Engineering	48	Open Tube	24	Open Tube	JB3 "B"



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