

**GRAHAM**  
**VIKING**

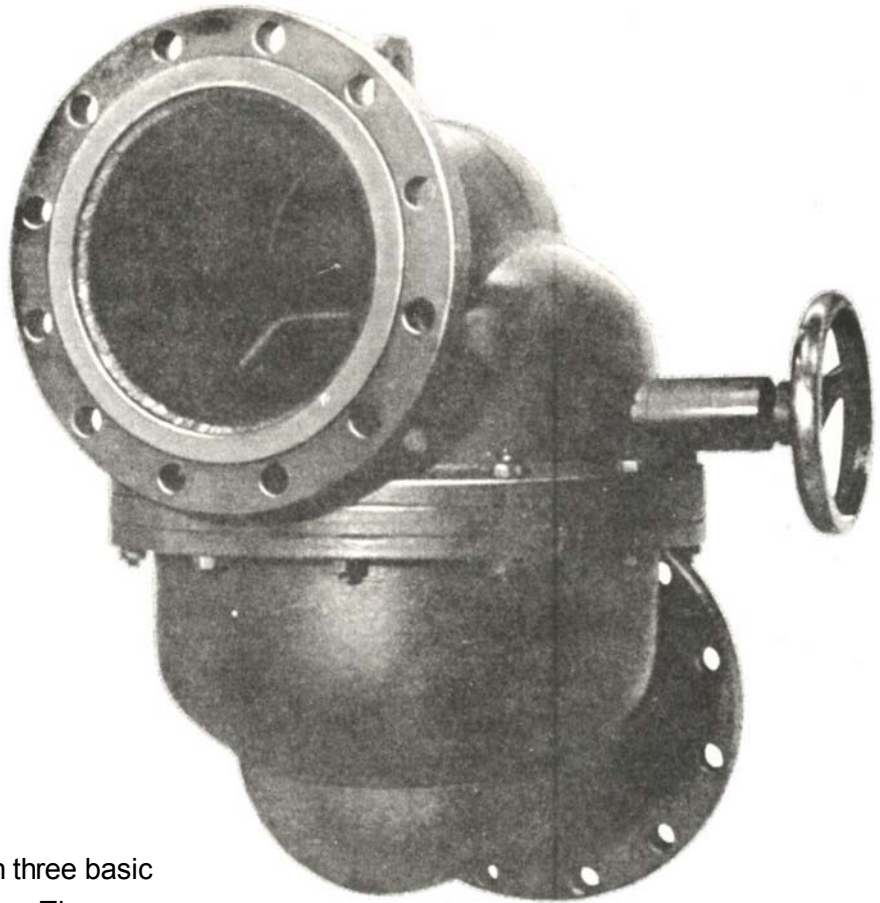


**GRAHAM**  
ENGINEERING ANSWERS



## **RELIEF VALVES**

*FOR CONDENSER SERVICE*



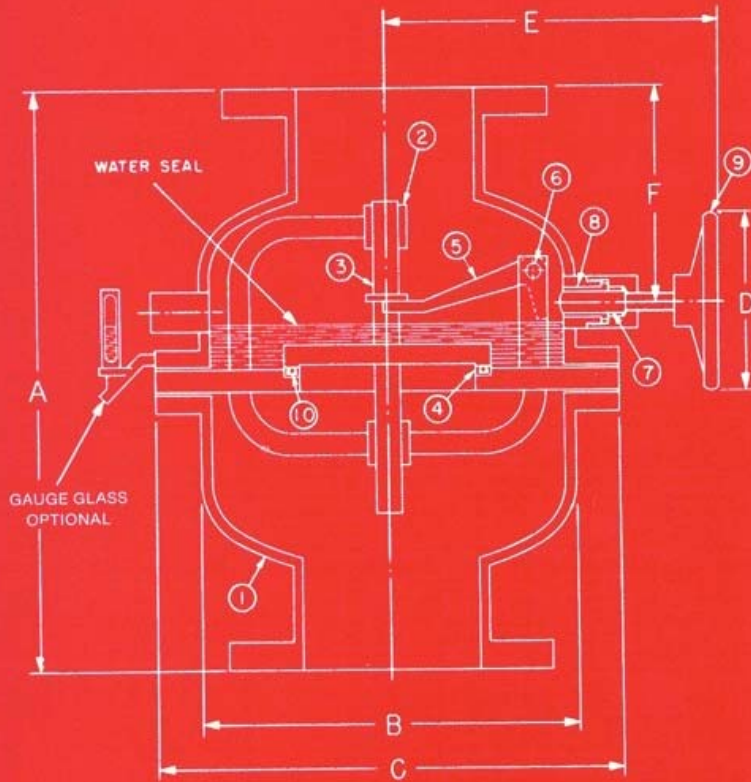
### **General Description**

Graham Viking Valves are produced in three basic designs: Horizontal, Vertical and Angle. The Horizontal and Angle valves are available with various angular relationships between the inlet and outlet flanges to facilitate piping. Fabrication is achieved by welding procedures and welders qualified to Section IX of the ASME Boiler and Pressure Vessel Code. All valves are tested to ASA standards and are vacuum tight; all valves also receive in-process inspection as well as inspection prior to shipment to assure proper operation at the site.





# VERTICAL RELIEF VALVE



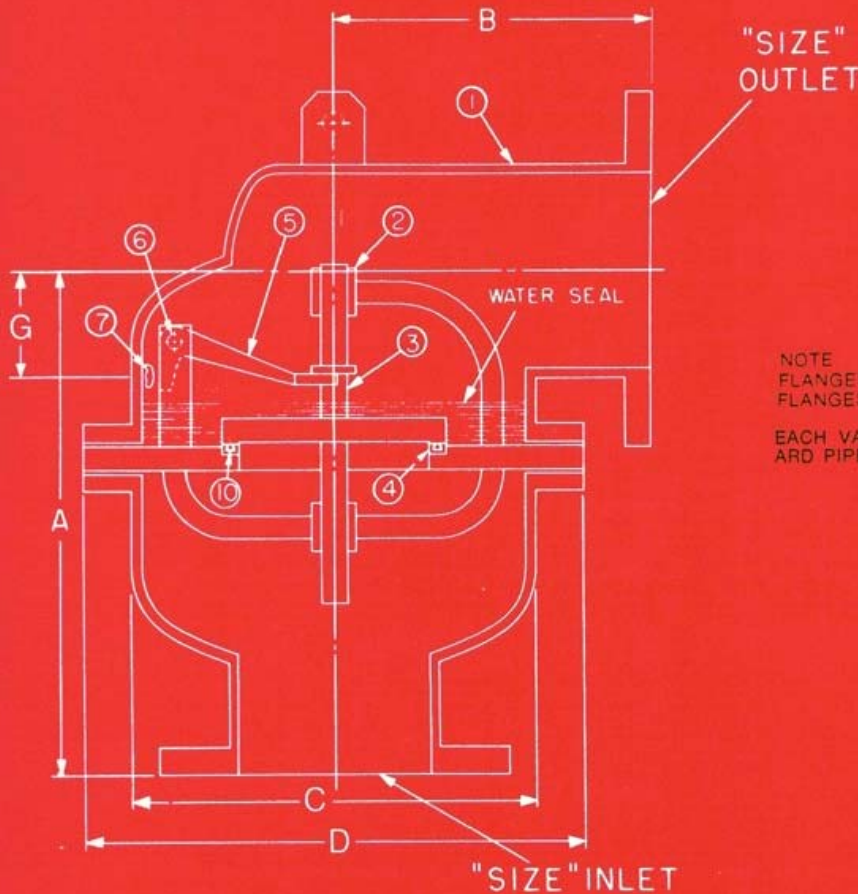
LIST OF MATERIALS		
NO	DESCRIPTION	MATERIAL
1	BODY	STEEL
2	GUIDE BUSHING	ST STEEL
3	SEAL SHAFT	ST STEEL
4	SEAL & SEAT FACING	ST STEEL
5	LIFT LEVER	STEEL
6	PIN	ST STEEL
7	LIFT SHAFT	ST STEEL
8	SHAFT BUSHING	TEFLON
9	HANDWHEEL	ALUM
10	"O" RING SEAL	BUNA "N"
11	SEAL DISC	STEEL
12	BEARING PLATE	STEEL
13	GUIDE BARS	STEEL
14	GASKETS	COMP ASB

NOTE  
 FLANGES ON 4" THRU 14" VALVES ARE 150° A.S.A. (F.F.)  
 FLANGES ON 16" THRU 36" VALVES ARE 125° LIGHT WT.  
 EACH VALVE HAS TWO GASKETS, BOTH ARE ASA STAND-  
 ARD PIPE FLANGE GASKETS OF THE NOMINAL BODY SIZE.

TABLE OF DIMENSIONS ALL IN INCHES									
SIZE	A	B	C	D	E	F	J	K	EST. WT. LBS.
4	16 7/8	10 3/4	13 3/4	6	10 1/4	5 7/8	3/4	3/8	140
5	17 7/8	10 3/4	13 3/4	6	10 1/4	6 1/4	3/4	3/8	150
6	19 1/2	12 3/4	15 3/4	6	11 1/4	7 3/16	3/4	3/8	190
8	22 1/4	16	19	8	15 3/4	8 3/16	3/4	3/8	290
10	25 5/8	18	21	8	16 3/4	9 3/16	3/4	3/8	390
12	28 1/4	20	23 1/2	8	17 3/4	10 3/16	3/4	3/8	560
14	30 5/8	24	27 1/2	8	19 3/4	11 1/16	3/4	3/8	760
16	29 7/8	24	27 1/2	8	19 3/4	11 1/16	3/4	3/8	700
18	39 1/2	28	31 1/2	10	24 1/4	15 3/16	3/4	3/8	820
20	39 1/4	28	31 1/2	10	24 1/4	15 3/16	3/4	3/8	970
24	43 7/8	32	35 1/2	10	26 1/4	16 7/16	1	1/2	1320
30	51	40	43 3/4	10	30 1/4	19 3/16	1	1/2	2050
36	59 7/8	48	51 3/4	10	34 1/4	23 1/16	1	1/2	3130

J: PIPE THREAD-OVERFLOW CONNECTION  
 K: PIPE THREAD-WATER SEAL CONNECTION

# ANGLE RELIEF VALVE



LIST OF MATERIALS		
NO	DESCRIPTION	MATERIAL
1	BODY	STEEL
2	GUIDE BUSHING	ST STEEL
3	SEAL SHAFT	ST STEEL
4	SEAL & SEAT FACING	ST STEEL
5	LIFT LEVER	STEEL
6	PIN	ST STEEL
7	LIFT SHAFT	ST STEEL
8	SHAFT BUSHING	TEFLON
9	HANDWHEEL	ALUM
10	"O" RING SEAL	BUNA "N"
11	SEAL DISC	STEEL
12	BEARING PLATE	STEEL
13	GUIDE BARS	STEEL
14	GASKETS	COMP ASB

NOTE  
 FLANGES ON 4" THRU 14" VALVES ARE 150° A.S.A. (F.F.)  
 FLANGES ON 16" THRU 36" VALVES ARE 125° LIGHT WT.

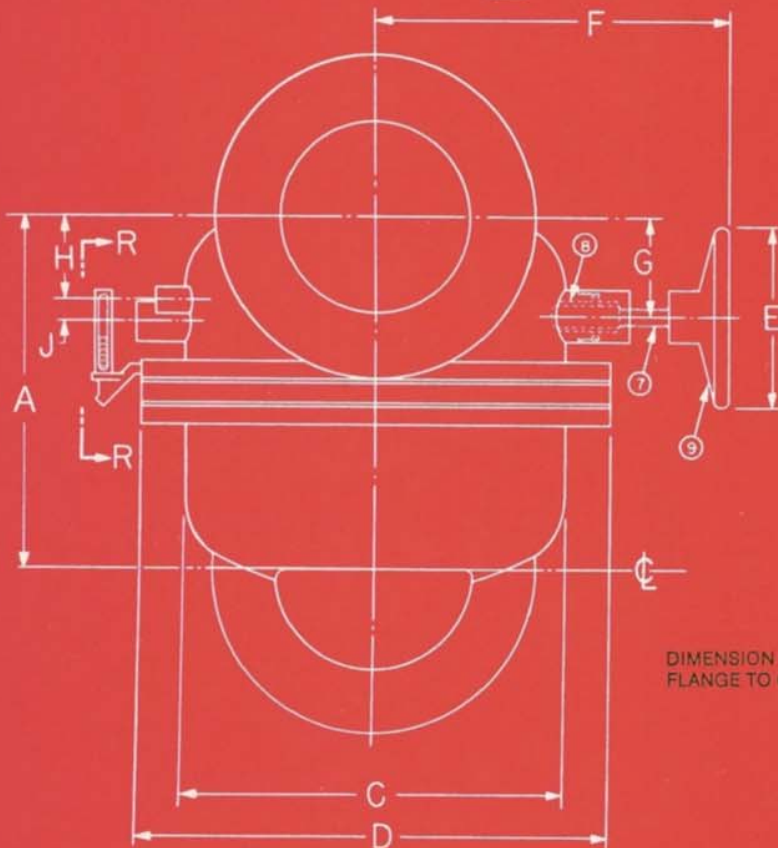
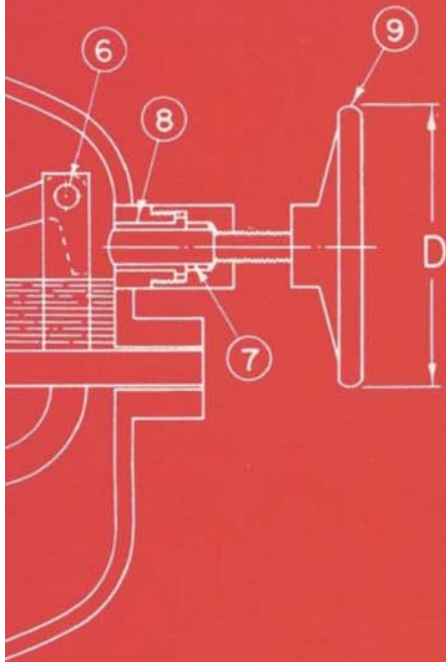
EACH VALVE HAS TWO GASKETS, BOTH ARE ASA STAND-  
 ARD PIPE FLANGE GASKETS OF THE NOMINAL BODY SIZE.

TABLE OF DIMENSIONS ALL IN INCHES								
SIZE	A	B	C	D	G	K	L	EST. WT. LBS.
4	3 3/8	8 3/4	10 3/4	13 3/4	2 3/8	3/4	3/8	145
5	13 3/4	8 3/4	10 3/4	13 3/4	2 3/8	3/4	3/8	155
6	15 3/8	10	12 3/4	15 3/4	3 1/4	3/4	3/8	210
8	17 7/8	11 3/4	16	19	3 3/8	3/4	3/8	320
10	21 1/4	13	18	21	5 3/16	3/4	3/8	420
12	23 3/8	14 1/4	20	23 1/2	5 3/16	3/4	3/8	600
14	25 1/8	17	24	27 1/2	5 13/16	3/4	3/8	805
16	25 3/8	17	24	27 1/2	6 3/16	3/4	3/8	760
18	33 1/2	18 1/2	28	31 1/2	9 3/8	3/4	3/8	890
20	32 3/8	18 1/2	28	31 1/2	8 3/8	3/4	3/8	1080
24	37 1/8	21	32	35 1/2	10 7/8	1	1/2	1450
30	44 3/8	25	40	43 3/8	13 3/16	1	1/2	2280
36	52 1/8	30	48	51 3/8	16 1/8	1	1/2	3500

K: PIPE THREAD-OVERFLOW CONNECTION  
 L: PIPE THREAD-WATER SEAL CONNECTION



# HORIZONTAL RELIEF VALVE



DIMENSION B IS FLANGE TO C-C

LIST OF MATERIALS		
NO	DESCRIPTION	MATERIAL
1	BODY	STEEL
2	GUIDE BUSHING	ST. STEEL
3	SEAL SHAFT	ST. STEEL
4	SEAL & SEAT FACING	ST. STEEL
5	LIFT LEVER	STEEL
6	PIN	ST. STEEL
7	LIFT SHAFT	ST. STEEL
8	SHAFT BUSHING	TEFLON
9	HANDWHEEL	ALUM.
10	"O" RING SEAL	BUNA "N"
11	SEAL DISC	STEEL
12	BEARING PLATE	STEEL
13	GUIDE BARS	STEEL
14	GASKETS	COMP. ASB.

NOTE:  
 FLANGES ON 4" THRU 14" VALVES ARE 150° A.S.A. (F.F.)  
 FLANGES ON 16" THRU 36" VALVES ARE 125° LIGHT WT.  
 EACH VALVE HAS TWO GASKETS, BOTH ARE ASA STANDARD PIPE FLANGE GASKETS OF THE NOMINAL BODY SIZE.

TABLE OF DIMENSIONS ALL IN INCHES											
SIZE	A	B	C	D	E	F	G	H	K	L	Est. Wt. LBS.
4	10 3/8	8 3/4	10 3/4	13 3/4	6	10 1/4	2 3/8	2 3/8	3/4	3/4	150
5	9 3/8	8 3/4	10 3/4	13 3/4	6	10 1/4	2 3/8	2 1/2	3/4	3/4	160
6	11 3/8	10	12 3/4	15 3/4	6	11 1/4	3 1/4	3	3/4	3/4	285
8	13 1/2	11 3/4	16	19	8	15 3/4	3 13/16	4	3/4	3/4	390
10	16 3/8	13	18	21	8	16 3/4	5 3/16	5 3/8	3/4	3/4	455
12	18	14 1/4	20	23 1/2	8	17 3/4	5 3/16	5 3/4	3/4	3/4	650
14	19 3/8	17	24	27 1/2	8	19 3/4	5 3/16	6 3/8	3/4	3/4	855
16	20 3/8	17	24	27 1/2	8	19 3/4	6 3/16	7	3/4	3/4	825
18	27 1/2	18 1/2	28	31 1/2	10	24 1/4	9 3/16	9 3/8	3/4	3/4	990
20	26	18 1/2	28	31 1/2	10	24 1/4	8 3/8	8 5/8	3/4	3/4	1185
24	31 1/2	21	32	35 1/2	10	26 1/4	10 1/16	11 1/8	1 1/2	1 1/2	1620
30	38 1/2	25	40	43 3/4	10	30 1/4	13 3/16	14 1/2	1 1/2	1 1/2	2520
36	45 1/2	30	48	51 3/4	10	34 1/4	16 1/16	17 3/4	1 1/2	1 1/2	3870

K: PIPE THREAD-OVERFLOW CONNECTION  
 L: PIPE THREAD-WATER SEAL CONNECTION

## HOW TO ORDER

When ordering or requesting specific information, please include the following particulars for either a replacement valve or spare parts:

- A. A complete description of whether horizontal, vertical or angle is required.
- B. Specify size.
- C. Specify special materials of construction, if any.
- D. Advise if water seal is wanted and gauge glass required.
- E. State number of valves required and delivery schedule.

Spare parts are available for immediate delivery on any size valve. Please state serial number of valve and parts required, indicating item numbers from drawing.

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## FINISHED WEIGHTS BY TYPES AND SIZES

### Condenser Service Relief Valves

Size	Vertical	Angle	Horizontal
4"	106	122	139
5"	117	134	152
6"	154	178	202
8"	234	276	318
10"	312	372	431
12"	449	537	625
14"	580	683	787
16"	515	631	748
18"	732	893	1055
20"	791	980	1169
24"	1074	1352	1630
30"	1517	1915	2313
36"	2509	3054	3598

gauge glass for above valves if required



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