SINCE — 1875

INSTALLATION, OPERATING and MAINTENANCE INSTRUCTIONS for KUNKLE SAFETY and RELIEF VALVES

Where safety valves require repair, service adjustments or set pressure change with new spring, work shall be accomplished by the manufacturer, user, or holders of "V", "UV" and/or "VR" stamps. However, proper installation, operation and maintenance procedures will prevent many problems and permit you to obtain good service from your Kunkle safety and relief valves.

INSTALLATION

1. Mount the valve in a vertical position so that discharge piping and Code required drains can be properly piped to prevent build-up of back pressure and accumulation of foreign material around the valve seat area.
2. Apply only a moderate amount of pipe compound to male threads only, leaving the first thread clean. Compound applied to female threads or used to excess can find its way into the valve, causing leakage.
3. Avoid over-tightening threaded connection valves as this can distort the seats. As the valve and the vessel are heated, the heat involved will grasp the valve more firmly.
4. When installing flange connected valves, use new gaskets and draw the mounting bolts down evenly.
5. Do not use the valve outlet or cap as a lever for installation. Use only flat jawed wrenches on the flats provided.
6. Arrange discharge piping (if used) so that it cannot bear on the valve when either hot or cold, by using a drip pan elbow or flexible connection between the valve and the escape pipe.

OPERATION

1. Avoid having the operating pressure too near the safety valve's set pressure. A minimum differential of 5# or 10% (whichever is greater) is recommended. An even greater differential is desirable and will assure better seat tightness and valve longevity.
2. Avoid excessive operation of the safety valve as even one opening can provide a means for leakage. Safety valves should be operated only often enough to assure that they are in good working order.
3. Pop test the valve by raising the operating pressure to the set pressure of the safety valve, allowing it to open and reseat as it would in normal service.
4. Do not hand operate the valve with less than 75% of the stamped set pressure exerted on the underside of the disc. When hand operating, be sure to hold the valve in an open position long enough to purge accumulated foreign material from the seat area and then allow the valve to snap shut.
5. Avoid wire, cable or chain pulls for attachment to levers that do not allow a vertical pull. The weight of these devices should not be directed to the safety valve.

MAINTENANCE

1. Develop a regular program of visual inspection, looking for clogged drains and discharge pipe, dirt build-up in and around the valve seat and broken or missing parts.
2. Test the safety valve every two to six months (depending on plant age and condition), preferably by raising the system pressure to the safety valve's set pressure or operating the hand lever (see point 4 under "Operations" above).
3. Do not paint, oil or otherwise cover any interior or working parts of any safety valve - safety valves do not require any lubrication or protective coating to work properly.

KUNKLE VALVE COMPANY, INC.
P.O. BOX 1740
Fort Wayne, Indiana 46801

PMI INDUSTRIES, INC.

CIA
LANGLEY, VIRGINIA

JOB NO. 419-85

SHEET 1 OF 5

LINE NO.	DRAWING	QUAN.	DESCRIPTION	SIZE	MAT'L	WHERE USED	COST
1	C-457	1	GENERAL ARRANGEMENT - 165,000#/HR				
2			HORIZONTAL SPRAY TYPE DEAERATING HEATER				
3							
4		1	SHELL DETAIL - 165,000 #/HR				
5			SPRAY DEAERATING HEATER				
6			SHAPE: HORIZONTAL				
7			OPERATING PRESSURE: 10 PSIG				
8			STORAGE CAPACITY: 3,300 GALLONS				
9			OXYGEN GUARANTEE: 0.005 ML/L				
10			DESIGN PRESSURE: 50 PSIG				
11			CONSTRUCTION: ASME CODE W/STAMP				
12			SIZE: 7'-0" O.D. x 13'-6" STR	SA	516 GR 70		
13							
14		6	SPRAY VALVES		316 SS	S.T.T.F.	
15							
16		1	NAMEPLATE			S.T.T.F.	
17							
18							
19							
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DATE

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BILL OF MATERIAL

PMI INDUSTRIES, INC.

JOB NO. 419-85

SHEET 2 OF 5

LINE NO.	DRAWING	QUAN.	DESCRIPTION	SIZE	MAT'L	WHERE USED	COST
1		3	GAUGE GLASS - CONSOLIDATED 20-150				
2			COMPLETE WITH RODS, GLASS AND				
3			2 - 1/2" AUTOMATIC COCKS ON 36" CENTERLINES				
4							
5		3	LEVEL SWITCHES - MERCOID 123				
6			120 VOLT - SPDT SWITCH				
7			ONE (1) MAKE ON HIGH LEVEL			HIGH LEVEL ALARM	
8			ONE (1) MAKE ON LOW LEVEL			LOW LEVEL ALARM	
9			ONE (1) MAKE ON RISING LEVEL			OVERFLOW CONTROL	
10							
11		1	PRESSURE GAUGE - WEKSLER # BA14A				
12			PHOSPHOR BRONZE BOURDON TUBE				
13			4 1/2" Ø DIAL, 1/4" BACK CONNECTION				
14			WITH BRASS TEE HANDLE COCK				
15			AND IRON SYPHON				
16			RANGE: 0-60 PSIG				
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PMI INDUSTRIES, INC.

JOB NO. 419-85

SHEET 3 OF 5

LINE NO.	DRAWING	QUAN.	DESCRIPTION	SIZE	MAT'L	WHERE USED	COST
1		2	THERMOMETERS - WEKSLER #5A06				
2			5" Ø DIAL, STAINLESS STEEL CASE				
3			BACK CONNECTED, 1/2" NPT 6" STEM LENGTH				
4			WITH BRASS WELL NO. L3B6 WITH 2 1/2"				
5			LAGGING EXTENSION				
6			TEMPERATURE RANGE: 50°F TO 300°F				
7							
8		1	VACUUM BREAKER, 3" JENKINS 624 FLGD		CI		
9							
10		1	RELIEF VALVE - KUNKLE MODEL 252 K 30				
11			IBBM 30, 3 x K x 3, IRON BODY				
12			3" - 250# INLET, 3" NPT OUTLET				
13			SET TO RELIEVE STEAM @ 50 PSIG				
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15							
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BILL OF MATERIAL

PMI INDUSTRIES, INC.

JOB NO. 419-85

SHEET 4 OF 5

LINE NO.	DRAWING	QUAN.	DESCRIPTION	SIZE	MAT'L	WHERE USED	COST
1		1	OVERFLOW VALVE FISHER MODEL 1051-9500			OVERFLOW SERVICE	
2			6" BUTTERFLY VALVE AND PNEUMATIC ACTIVATOR				
3			CAST IRON BODY, 316 STAINLESS STEEL FISHTAIL DISC				
4			TFE ELASTOMER LINER				
5			DUTY: 344 GPM WATER @ 2 PSIG MINIMUM PRESSURE				
6			240°F MAXIMUM TEMPERATURE				
7			11 PSI MINIMUM UPSTREAM PRESSURE				
8			0 PSI DOWNSTREAM PRESSURE				
9			11 PSI PRESSURE DROP ACROSS VALVE				
10			VALVE CLOSES WITH AIR PRESSURE, OPENS ON AIR FAILURE				
11							
12	A-219-B		#1051 ACTIVATOR COMPLETE WITH 3-WAY SOLENOID VALVE,				
13			STRAIGHT RUN PORT A & B OPEN WHEN NOT ENERGIZED.				
14			ANGLE PORT A & C OPEN WHEN ENERGIZED,				
15			COMPLETE WITH 1/4" 67 FR REGULATOR				
16							
17							
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BILL OF MATERIAL

PMI INDUSTRIES, INC.

JOB NO. 419-85

SHEET 5 OF 5

LINE NO.	DRAWING	QUAN.	DESCRIPTION	SIZE	MAT'L	WHERE USED	COST
1		1	VALVE - FISHER CONTROLS MODEL 657ED				
2			1" SCREWED CAST IRON WITH HARDENED 416 STAINLESS				
3			STEEL PLUG AND SET, RING AND HARDENED 17-4 S.S. CAGE,				
4			EQUAL PERCENTAGE VALVE TO CLOSE LEVEL RISE,				
5			OPEN AIR FAILURE				
6			SERVICE: 20 GPM MAXIMUM FLOW @ 68°F				
7			32 PSI MINIMUM UPSTREAM PRESSURE				
8			12 PSI DOWNSTREAM PRESSURE				
9			20 PSI PRESSURE DROP ACROSS VALVE				
10							
11		1	FISHER GOVERNOR COMPANY - 2500-249-67 INLET CONTROLLER				
12			FLOAT CAGE - FIGURE 249 WITH 1 1/2" SCREWED END STYLE S-1,				
13			3" x 4" S.S. DISPLACEMENT FLOAT COMPLETE WITH FIGURE 2500				
14			PNEUMATIC PILOT AND 1/4" TYPE 67FR FILTER FLOAT SERVICE.				
15			WATER AT 240°F, 10 PSI PRESSURE. PILOT ACTION:				
16			RISING LEVEL TO INCREASE DIAPHRAM PRESSURE				
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