

## PARKER BOILER CO. CONBRACO & KUNKLE STEAM SAFETY VALVES

These steam safety valves are a high capacity type specifically designed for boilers where high relieving capacity in a small size valve is desired. The valve size can be frequently reduced due to the high capacity of these valves in comparison to other types. This results in lower initial cost and a potential savings to the customer on replacement of other types. The schedule on Page 2 shows the standard size and model of valves used on Parker Boilers packaged steam.

### ADVANTAGES OF HIGH PRESSURE SAFETY VALVES

1. **Soft Teflon Seats**, which greatly reduce seat leakage problems are standard on all models.
2. **Precision Wound, Calibrated Springs** are used to provide stability of performance and uniform blowdown. The spring is aligned with washers to center the spring on the disc. This assures accurate relief at the set pressure, eliminating leakage before proper pressure is obtained.
3. **Double Guided Combination Adjusting Ring and Disc Guide** provide better alignment between seat and disc, ease of blowdown adjustment and finer valve operation.
4. **Fine Adjustment, Lower Adjustment Rings** allow sharp, clean opening and closing without simmer and valve dribble.
5. **Precision Manufacture and Quality** are prerequisites in these Valves.



### SELECTION AND OPERATING INSTRUCTIONS

1. Select the valve of the proper pressure rating and rated pound discharge capacity to accommodate the particular boiler. The minimum required relieving capacity for valves on ASME Section I 'S' Code boilers shall not be less than the maximum designed steaming capacity as determined by the Manufacturer. The required minimum relief valve capacity for a Parker 'H' Code 15 P.S.I. water tube boiler is determined by multiplying the heating surface in sq. ft. times 10. For example, a boiler with 50 sq. ft. heating surface requires a safety valve with 500 lbs. per hour discharge capacity.
2. The safety valve set pressure must never be in excess of the MAWP pressure stamped on the boiler. For high pressure boilers, the maximum boiler operating pressure must always be at least 10% below (but not less than 7 PSI below) the safety valve set pressure to prevent leakage. For low pressure boilers (15 PSI valve set pressure), the maximum boiler operating pressure must be at least 4 PSI below the safety valve set pressure to prevent leakage. Failure to maintain this operating gap can result in an accumulation of deposits on the seating surface, which may impede proper operation of the safety valve.

### INSTALLATION INSTRUCTIONS

1. Install the safety valve in a vertical upright position at the opening provided and recommended by the manufacturer as close to the boiler as conveniently possible. No shutoff valve or other connections or restrictions are permissible between the boiler and the safety valve. The safety valve piping and opening from the boiler cannot be less than the inlet size of the valve, but the valve inlet may be smaller than the boiler outlet providing the safety valve has the required relieving capacity.
2. The safety valve is a precision made instrument and should be handled with care. Before installing be sure that:
  - (a) All upstream pipes and connections have been blown clean.
  - (b) Pipe compound is used on external threads only.
  - (c) Inlet port of valve is free of any foreign material.
  - (d) Use wrench on valve inlet hex only and avoid over tightening. Do not use a pipe wrench.
3. Do not cap or plug drain hole in the side of the valve body.
4. **TO AVOID WATER DAMAGE OR SCALDING DUE TO VALVE OPERATION, A DISCHARGE PIPE MUST BE CONNECTED TO THE VALVE OUTLET AND RUN FULL SIZE TO A SAFE PLACE OF DISPOSAL. IF A DISCHARGE PIPE IS NOT INSTALLED CORRECTLY, PERSONAL INJURY AND PROPERTY DAMAGE COULD RESULT.** The discharge line must be piped independent of all other piping, as short and straight as possible, without any intervening valve of any description and terminate freely to atmosphere. Never restrict or block a safety valve outlet. Install piping with sufficient flexibility to allow for free expansion and properly support so there is no strain on the safety valve body. Pipe to a safe point of discharge to prevent any possibility of personal injury and within 18" from the floor or into an open receptacle protected by a splash shield. If discharge cannot be piped to a completely safe location in the boiler room, such discharge should be piped outside the room to a safe location. Have adequate provision for draining condensate at discharge outlet. If piped upwardly, a drain line should be provided at the low point to keep this line drained. Secure the piping so it cannot move to cause personal injury when safety valve discharges. If piping is considerable distance, install a union near the safety valve outlet for convenience of changing valve when required. Use schedule 40 pipe only for discharge line (do not use schedule 80, extra strong or double extra strong discharge pipe or connections).

**PARKER BOILER CO**  
**CONBRACO & KUNKLE STEAM SAFETY VALVES**

**I. MAINTENANCE AND REPAIR**

1. Safety valves should be regularly inspected and kept in good repair. Replace valves on indication of leaks or deterioration.
2. The Code may require, and it is recommended that the safety valve be tested periodically, at least every month. Test also at the beginning and end of any extended non-service period. **CAUTION:** Prior to testing, make certain that all personnel are clear from area and that the outlet of valve is properly piped to a safe point of discharge (see Installation Instructions, Page 1). A loud noise and high velocity steam will discharge freely from discharge port and through drain hole provided in the side of valve body. Test lever is designed to be activated only when 75% or more of the popping pressure is reached, otherwise distortion could result. The valve should be tested at or near maximum operating pressure by holding the test lever fully open for approximately 5 seconds to flush the valve seat free of any debris or sediment then permit valve to snap shut. If the valve leaks, raise and lower the handle slowly and be sure the valve properly reseats. If valve continues to leak, shut down boiler and replace valve before placing boiler back in service.
3. It is recommended that a spare valve be kept on hand for immediate replacement.

**II. SCHEDULE OF VALVES USED ON PARKER BOILERS**

BOILER MODEL HORSEPOWER	HIGH PRESSURE 'S' CODE		LOW PRESSURE 'H' CODE	
	MIN. RELIEVING CAP. = MAX. DESIGNED STEAMING CAP. lb/hr	STD. 'V' VALVE 100 PSI & ABOVE	MINIMUM RELIEF VALVE CAPACITY lb/hr	STD. 'HV' VALVE 15 PSI ONLY
102-1-1/2 PARKERETTE	52	1/2" 6021D-1/2-**	160	3/4" 13-211-08
102-3 PARKERETTE	104	1/2" 6021D-1/2-**	199	3/4" 13-211-08
101-5 U-DRUM	173	3/4" 19-302-**	380	3/4" 13-211-08
103-7 H-DRUM	242	3/4" 19-302-**	470	3/4" 13-211-08
101-8 U-DRUM	276	3/4" 19-302-**	510	1" 13-202-08
103-9.5 OR 10 H-DRUM	345	3/4" 19-302-**	680	1-1/4" 13-213-08
101-9.5 OR 12 U-DRUM	414	3/4" 19-302-**	670	1-1/4" 13-213-08
103-15 H-DRUM	518	3/4" 19-302-**	825	1-1/4" 13-213-08
101-16 U-DRUM	552	3/4" 19-302-**	900	1-1/4" 13-213-08
103-20 H-DRUM	690	1" 19-402-**	1060	1-1/4" 13-213-08
101-22 U-DRUM	759	1" 19-402-**	1290	1-1/2" 13-214-08
103-25 H-DRUM	863	1" 19-402-**	1320	1-1/2" 13-214-08
104-30 H-DRUM	1035	1-1/4" 19-502-**	1720	1-1/2" 13-214-08
101-30 U-DRUM	1035	1-1/4" 19-502-**	2030	2" 930-2-15
104-40 H-DRUM	1380	1-1/4" 19-502-**	2320	2" 930-2-15
101-40 U-DRUM	1380	1-1/4" 19-502-**	2900	2" 930-2-15
104-48 OR 50 H-DRUM	1725	1-1/2" 19-602-**	2780	2" 930-2-15
105-70 H-DRUM	2415	1-1/2" 19-602-**	3490	2-1/2" 930-2-1/2-15
105-90 H-DRUM	3105	1-1/2" 19-602-** (Note1)	4560	3" 930-3-15 (Note2)
105-115 H-DRUM	3968	(2) 1-1/4" 19-502-** (Note1)	5930	(2) 2" 930-2-15
105-150 H-DRUM	5175	(2) 1-1/4" 19-502-** (Note1)	7930	(2) 2-1/2" 930-2-1/2-15

Note 1: 90, 115 & 150 HP HIGH PRESSURE BOILERS BEFORE 7/1/97 USED TWO 1-1/2" 19-602-\*\* VALVES.

Note 2: 90 HP LOW PRESSURE BOILERS BEFORE 7/1/97 USED TWO 2" 930-2-15 VALVES.

**III. VALVE SPECIFICATIONS**

VALVE SIZE INLET X OUTLET	MANUFACTURER & MODEL	RELIEVING CAPACITY POUNDS OF STEAM PER HOUR		
		15 PSI	100 PSI	125 PSI
3/4 X 3/4"	CONBRACO 13-211-08 HV	475	NA	NA
1 X 1"	CONBRACO 13-202-08 HV	643	NA	NA
1-1/4 X 1-1/2"	CONBRACO 13-213-08 HV	1,200	NA	NA
1-1/2 X 2"	CONBRACO 13-214-08 HV	1,900	NA	NA
2 X 2"	KUNKLE 930-2-15 HV	3,161	NA	NA
2-1/2 X 2-1/2"	KUNKLE 930-2-1/2-15 HV	4,497	NA	NA
3 X 3"	KUNKLE 930-3-15 HV	6,942	NA	NA
1/2 X 3/4"	KUNKLE 6021D-1/2-** V	150	643	712
1/2 X 3/4"	CONBRACO 19-202-** V	165	646	787
3/4 X 1"	CONBRACO 19-302-** V	295	1,150	1,402
1 X 1-1/4"	CONBRACO 19-402-** V	460	1,796	2,189
1-1/4 X 1-1/2"	CONBRACO 19-502-** V	755	2,947	3,592
1-1/2 X 2"	CONBRACO 19-602-** V	1,178	4,600	5,607
2 X 2-1/2"	CONBRACO 19-702-** V	1,934	7,549	9,200