REGULATORS REDUCING 500 ºF SERVICE

MODEL: **5213-SR-500**

Revision: 0

BULLETIN 5213

DESCRIPTION

The SR-500 Series Pressure Reducing Regulator is designed for industrial furnaces and heating applications. These regulators will maintain a constant outlet pressure over a wide range of flows even if the inlet pressure varies. See table below for spring ranges.

Standard construction is for clean fuel gases including Natural Gas, Propane, Butane and other Hydrocarbon fuels. Special construction is available for gases such as Coke Oven Gas. The SR-500 has a maximum operating temperature of 500 ºF.

The standard design has internal compensation. For capacities greater than listed in the table the regulator can be supplied with external compensation.

CAPACITY TABLE

Model Number	Pipe Size	SCFH Gas Flow @ 14.0" W.C. Pressure Drop			
		MFD. 0.4 Sp. Gr.	NAT. 0.6 Sp. Gr.	AIR 1.0 Sp. Gr.	L.P. 1.5 Sp. Gr.
SR-12-500	1-1/2"	4,900	4,000	3,100	2,500
SR-20-500	2-1/2"	12,300	10,000	7,800	6,300
SR-24-500	3"	21,000	17,000	13,000	11,000
SR-32-500	4"	43,000	35,000	27,000	22,000

Maximum capacity must be limited to less than 200% of ratings above.

SPRING RANGES -- SR-500

Model Number	Spring Number	Spring Color	Outlet Pressure Range
SR-12-500	16	Orange	7" w.c. to 30" w.c.
SR-20-500	Fixed	No Color	0.85 psig
SR-24-500	Fixed	No Color	0.85 psig
SR-32-500	Fixed	No Color	0.50 psig
Select spring for each regulator based on required system delivery pressure.			

FEATURES

- Precision outlet pressure control
- Wide flow range
- Stainless steel valve
- Balance valve design - holds outlet pressure constant with varying inlet pressures
- Inlet pressures to 5 psig
- Synthetic, reinforced diaphragms - good for most fuel gases
- Springs color coded for identification

CAUTION: Operation of combustion equipment can be hazardous resulting in bodily injury or equipment damage. Each burner should be supervised by a combustion safeguard and only qualified personnel should install, make system adjustments and perform any required service.

ORDAN THERMAL PRODUCTS LTD
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NOTICE: PYRONICS practices a policy of continuous improvement in the design of its products. It reserves the right to change the specifcations at any time without prior notice.

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OPERATION

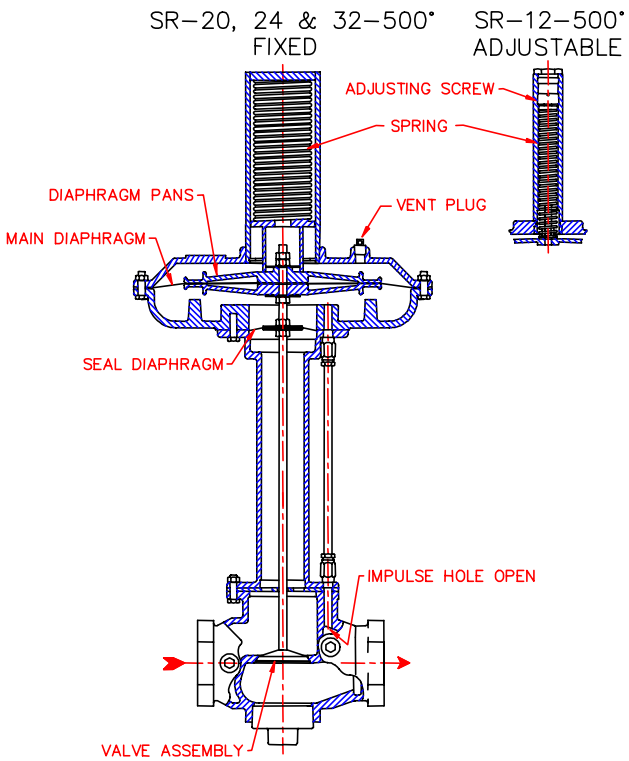
The SR-500 Series Reducing Regulators operate with inlet pressures in the range of 1 psig to 5 psig. See table on page 1 for delivery pressures for the various sizes available. The upper diaphragm chamber is normally open to atmosphere while the lower diaphragm chamber, by means of the impulse connection, is subject to outlet pressure.

The seal diaphragm is designed so that its area equals the effective area of the valve disc. Fluctuations in inlet pressure are thus counter-balanced by these two equal areas.

A compression spring loads the main diaphragm with an adjustable force which places the valve in an open position. When the outlet pressure under the main diaphragm equals the spring load, a balance of forces occurs to move the diaphragm and the valve assembly towards the closed position and maintain a constant delivery pressure.

As changes in flow are required by the connected system, there will be slight changes in the outlet pressure and a minor unbalance in forces on the main diaphragm. This large sensitive diaphragm will move either up or down, as required to restore the force balance.

The flow across the patented compensator produces a velocity condition which is proportional to flow. The impulse when combined with the outlet pressure is transmitted to the lower diaphragm chamber and automatically adjusts the valve to hold a



INSTALLATION

Regulators must always be mounted in a stem-up position, in a horizontal line, as close as practical to flow control point. Any other mounting position will cause a malfunction. The arrow cast on the side of the valve body indicates direction of flow.

Regulators should not be installed in areas where operating temperatures will exceed 500 °F. Where this requirement results in excessive piping, Remote Compensators should be used.

Outlet piping should be at least the same size as the regulator connection. At least five (5) diameters of straight pipe must be allowed between the regulator and the first downstream valve or fitting. Approved pipe joint compound should be used on all connections to prevent leaks. Piping should be supported, as required. A pipe Flange Pair (see Bulletin 5701) or union may be installed on both sides of Reducing Regulators to simplify replacement should repairs ever become necessary.

All gas lines should be tested for leaks before operation. When pressure testing lines, remove regulators and cap the lines.

The top diaphragm cover has a tapped hole for a factory installed bleed vent plug or loading tube connection. Do not install a solid pipe plug in this connection. Obstruction can cause faulty or sluggish operation. Venting of the top diaphragm chamber may be required (check local piping codes). Vent piping, if installed, must be without traps and preferable pitched away from the regulator and protected against stoppage.

Outlet pressure of regulator is dependent on spring compression. Adjustment screw is under stem cap. With a pressure gauge installed in outlet pipe, position slotted spring adjustment plug for desired pressure. Screw down (into housing) to raise pressure and up (out of housing) to lower pressure.

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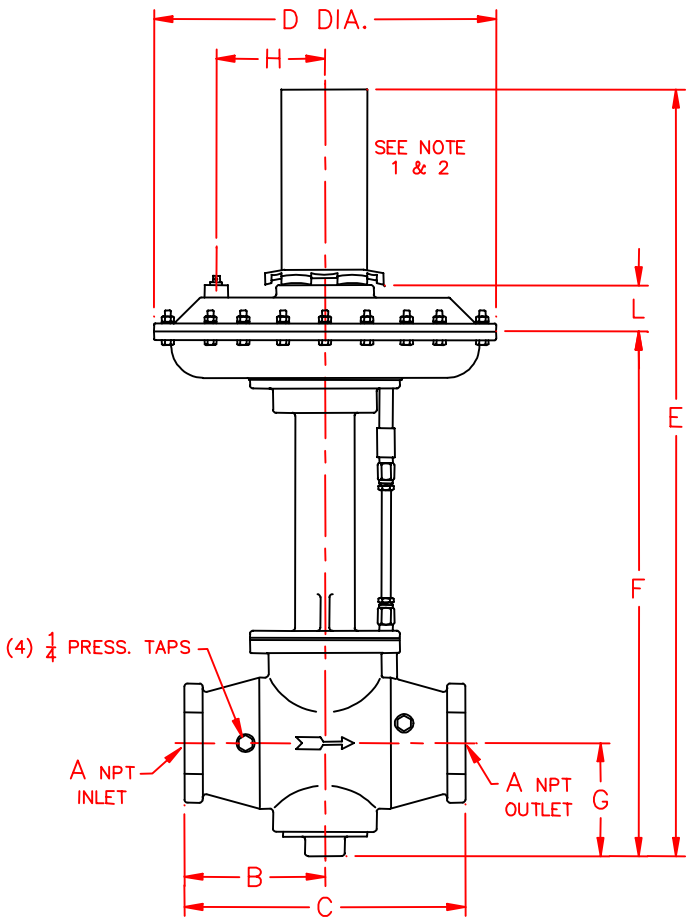
DIMENSIONS: 1-1/2” - 3” SR-500



Model Number	A	B	C	D	E	F	G	H	L	Weight	
										Lbs.	Kgs.
SR-12-500	1-1/2	3	6-1/2	11-3/4	27	18-3/8	3-1/4	3-7/8	1-3/8	24.3	11.02
SR-20-500	2-1/2	4	8-3/4	14	31-1/8	21-1/4	3-5/8	3-5/8	1-7/8	70.6	32.02
SR-24-500	3	5-3/4	11-1/2	14	33	23	4-5/8	3-5/8	1-7/8	88.0	39.92

NOTES:

1. Spring housing must be perpendicular to pipe run in an upright position.
2. Gas pipe run must be horizontal and level.
3. All dimensions are in inches.

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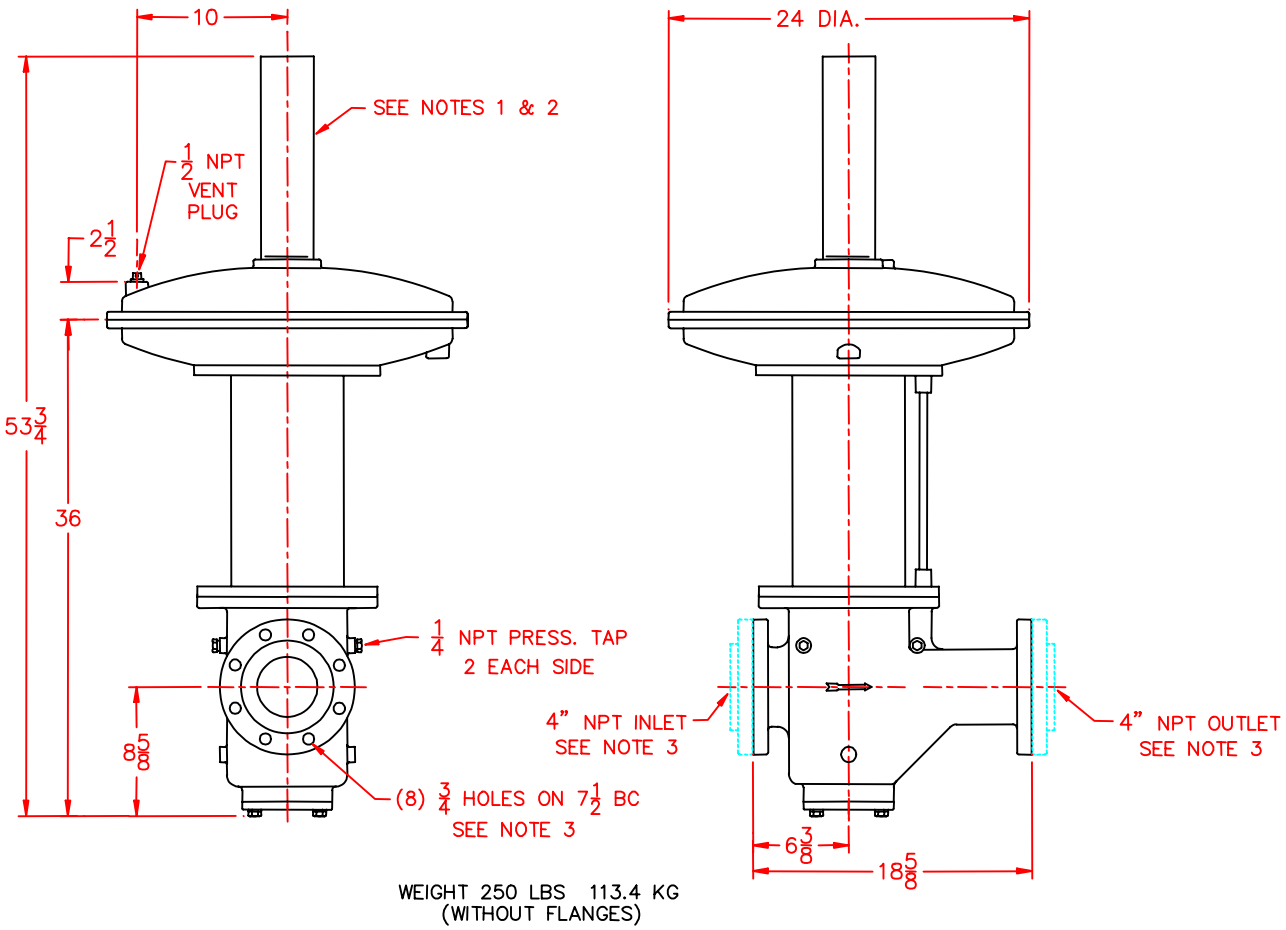
DIMENSIONS: 4" SR-500



NOTES:

1. Spring housing must be perpendicular to pipe run in an upright position.
2. Gas pipe run must be horizontal and level.
3. Designed to accept standard 4" ANSI flanges.
4. All dimensions are in inches.

ORDERING INFORMATION

1. Specify Model Number and quantities of Reducing Regulators required from capacity table on Page 1.
2. Select spring ranges required from table on Page 1.
3. Add code letters "RC" for Remote Compensator feature including compensator. Regulators for this use must be special assembled at factory.
4. Examples: SR-12-500-RC Reducing Regulator for a 7" to 30" w.c. adjustable outlet range, 1-1/2" size unit complete with Remote Compensator.
5. If in doubt about selection, send full information on operating requirements, flows, inlet and outlet pressures, type of gas, temperature, etc. for rapid determination by factory application engineers or contact your nearest Pyronics representative.