

Direct-Activated Pressure Reducing Valve
Z-Tide Model REF & RET Series
User Manual (English Language)



Manufacturing Year:_____

Information for European Market:

According to the relevant Safety Directive, the importer, agent or distributor who places the product to European market shall translate this user manual into the language of the country in which the product is to be used. Such translated user manual shall be provided together with this original user manual.

The additional address and contact information of the organization who is responsible for facilitate maintenance other than original manufacturer shall be provided in suitable way in this user manual as necessary.

Document No.	PED-TF-REF/RET-10	Version	Prepared by	
Issue Date	2009-10-23	1	Approved by	

1. General Precautions

a. Operation:

Direct-Activated Pressure reducing valve is designed to automatically reduce a high inlet pressure into a lower outlet pressure. The valve will maintain a relatively steady downstream pressure regardless of fluctuations in the inlet pressure or flow rate. **It is not a safety device and is not intended to be used as a safety valve.**

b. Material Selection:

The possibility of material deterioration in service and the need for periodic inspections is depended on the contained fluid. Carbide phase conversions to graphite, oxidation of ferrite materials will decrease in ductility of carbon steels at low temperature are among those items. However information about corrosion data is provided together with this user manual, the user is requested to take attention or consideration to determine the suitability of material in their application.

c. Fluid thermal expansion:

It is possible, when the piping system is in closed condition. Freeze protection shall be considered and/or release fluid by partially opening the shut-off valve of the piping system or some other means. User is recommended to prevent that the pressure in the valve will not exceed that allowed pressure, by means of piping design, installation, or operation procedure.

d. Electro Static effect:

The valve is designed with electrical continuity for piston-body in order to prevent electro static discharge. The user is responsible for ensuring the earthing of the piping system.

e. Do not open the bonnet or cap when bearing pressure.

f. Do not touch the valve surface when bearing high temperature condition.

g. Not allowed for unstable fluid, otherwise specified with PED category III in Declaration of conformity or/and in this user manual.

2. General description of the product

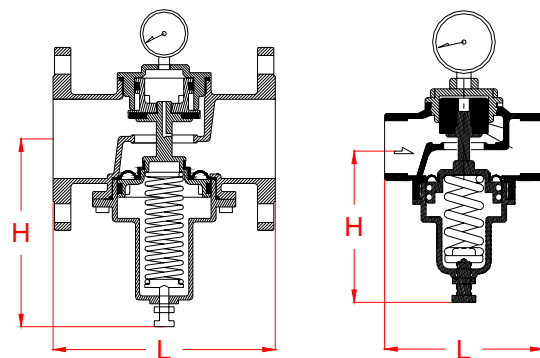
REF & RET Direct-Activated Pressure Reducing Valve is operated with the spring that activates the piston. The valve gate is normally opened. When the inlet pressure is higher than the counterforce from spring, the piston is pushed and the valve gate is **closed** at the same time to prevent over-pressure damage caused to the pipeline.

Pressure adjusting range: 1 ~ 6 bar / 4 ~ 10 bar / 8 ~ 13 bar

a. Specifications and Dimensions:

Item	Type	Size	H(mm)	L(mm)	Wt.(kg)	Cv
RET-25	Thread	DN 25	105	92	1.05	11
RET-40	Thread	DN 40	130	115	2.30	21
RET-50	Thread	DN 50	130	120	2.5kg	25

Item	Type	Size	H(mm)	L(mm)	Wt.(kg)	Cv
REF-25	Flange	DN 25	105	150	3.5kg	11
REF-50	Flange	DN 50	130	190	6.5kg	25
REF-80	Flange	DN 80	185	225	12kg	80



Shell Material	EN 10213-4, 1.4408 Stainless Steel
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- b. User shall consider the material's anti-corrosion feature of components which directly contact with the fluid. The corrosion data information is available in this user manual (or upon request).

3. Delivery Condition and Storage

Valves stay in the open condition during the transportation. Valves must store in an indoor warehouse to avoid dust and other foreign object. Do not take off the dust cover except ready to install immediately.

4. Installation

Cleaning

Even the valves were transported under a clean environment, operator must check if there is any foreign body or dust inside the bore. If yes, clean it before installation. Clean the valves by water, compression air, or steam.

Valve Installation (Install to the piping system)

a. Direction

The Direct-Activated Pressure Reducing Valve must be installed with the flow arrow on the body pointing in the direction of flow.

b. Position

The Direct-Activated Pressure Reducing Valve can be installed in any position, but the installer shall consider the load of the pipe line system and not to apply at the connection area. It will cause deformation and leakage to the connection.

5. Put into service

Operation

REF & RET Direct-Activated Pressure Reducing Valve is operated with the spring that activates the piston. The valve gate is normally opened. When the inlet pressure is higher than the counterforce from spring, the piston is pushed and the valve gate is **closed** at the same time to prevent over-pressure damage the pipeline.

Adjustment of Adjusting Stem

- a. Loose the lock nut of the adjusting stem. Turn the adjusting stem counterclockwise until lowest outlet pressure.
- b. Shut-off the flow of downstream. If the outlet pressure is higher than your setting pressure, release the pressure from downstream or outlet.
- c. The pressure gauge furnished indicates the outlet pressure. Turn the adjusting stem clockwise to reach the setting pressure.
- d. Open and shut off the flow of downstream to ensure the setting pressure is correct.
- e. Open the flow of downstream and tighten the locking nut of the adjusting stem.

6. Dangers of inappropriate use

Never uses the product exceed its allowed condition, such as pressure, temperature and fluid.
If the product has any inappropriate use, the product was damage. However, there are no signals occurs immediately. User shall change the product to avoid danger in the future.

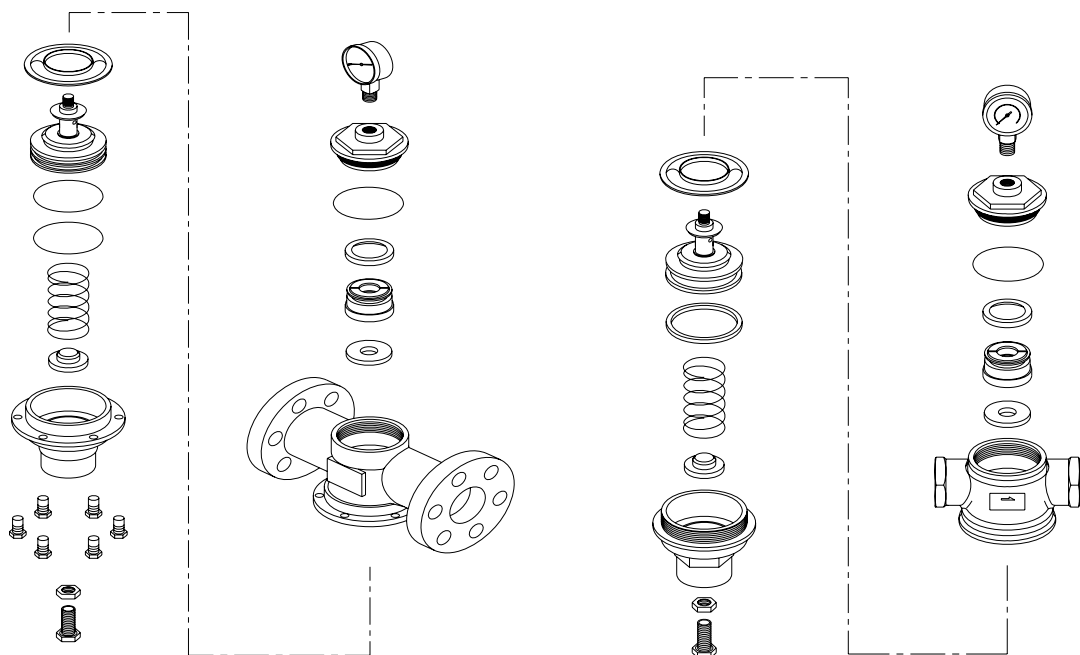
7. Maintenance

The following procedures are provided to enable the customer to perform all normal maintenance and repair operations. These operations are more easily performed with the valve removed from the pipe line. However in some cases, repair may be accomplished with removal of the valve as long as the supply has been shut off and the inlet and outlet pressure have been vented.

Disassembly

1. Loose the lock nut of the adjusting stem.
2. Turn the adjusting stem counter-clockwise to ensure removal of all spring force on the piston.
3. The valve parts can now be removed from the valve body as shown in the assembly drawing.

* A special tool may be needed (it is available be ordered from the factory, agent or distributor) to loosen and tighten the seat retainer. The valve parts can now be removed from the valve body as shown in the assembly drawing.



REF Series

RET Series

Inspection and replacement of parts

Inspect all parts and replace those worn or damaged with replacement parts. (It is available be ordered from the factory, agent or distributor)

Reassembly

For reassembly, just follow the reverse order of disassembly procedures.

All parts should be cleaned. Apply a thin uniform coating of fluorocarbon grease to spring button, threaded portion of adjusting screw, entire threaded area of the bonnet, o-rings and all threaded parts internal to the valves. Do not apply any grease to the inlet or outlet connections.

AFTER REASSEMBLED, IT SHOULD BE CONNECTED TO A PRESSURE SOURCE WITH MEDIA COMPATIBLE WITH THE USE OF THE VALVE AND PRESSURIZED TO CHECK FOR INTERNAL AND EXTERNAL LEAKAGE AND OPERATING FUNCTION.

8. Trouble Shooting

I. If pressure can't be reduced ...

1. Check the valve gate can be closed or not. If the valve gate cannot close, it might be some impurities blocked in the valve gate.
2. Close the inlet and outlet. Dismantle the gauge, release the pressure first.
3. Loosen the adjusting stem. Open the upper cover and lower cover and clean the inside.
4. Check if the diaphragm is broken or not. If it is broken, please replace the diaphragm.
5. For reassembly, just follow the reverse order of disassembly procedures.

9. Corrosion Data

Corrosion Data of the metal parts, seals and packing material are provided in annex sheet of this user manual. The corrosion data is just for information only. If any doubts of the corrosion resistance, contact the original manufacturer or service center which near your location.

10. Marking

Mfg logo: **Z-TIDE**

Mfg year: **2009**

Nominal pressure: **ANSI 150 (max. inlet pressure 25 kg/cm²) for example !**

Nominal size: **DN 15 / DN 50 / DN 80**

Material: **1.4408**

Working Temperature: **-15°C ~ 100°C**

Heat number: **XXXX** marked on the pressure retaining parts respective.