INSTALLATION, OPERATION and MAINTENANCE MANUAL

Direct Acting
Pressure Reducing Valve
Model: RE 1

MIYAWAKI INC.

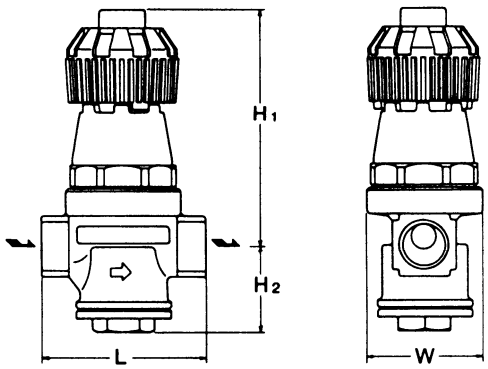
Osaka, Japan

The MIYAWAKI-Pressure Reducing Valve RE 1 is a direct acting pressure regulator designed for use in steam lines.
Prior to using the RE 1, read this manual thoroughly to understand the correct handling and operating procedure.
The manual should be used by experienced personnel as a guide to the installation and maintenance of the RE 1.
We ask you to contact MIYAWAKI or its local representative if further information is required.

1. Technical Data

Max. Primary (Inlet) Pressure:	RE1: 16 bar, 1600 kPa, 230 psig RE1-4 : 10 bar, 1000 kPa, 145 psig RE1-2 : 10 bar, 1000 kPa, 145 psig
Max. Secondary (Outlet) Pressure:	RE1: 10 bar, 1000 kPa, 145 psig RE1-4: 4 bar, 400kPa, 58 psig RE1-2: 2 bar, 200 kPa, 29 psig
Min. Secondary (Outlet) Pressure:	RE1, RE1-4: 0,5 bar, 50 kPa, 7 psig RE1-2: 0,2 bar, 20 kPa, 3 psig
Max. Pressure Reducing Ratio:	10:1
Max. Operating Temperature:	204°C, 400°F

2. Dimensions



Type	Size	Connection	Dimensions (mm)				Dimensions (in)				Weight	
			L	H_1	H_2	W	L	H_1	H_2	W	kg	lb
RE1	1/2"	Screwed Rc, NPT	80	137	46	63	3.2	5.4	1.8	2.5	1,4	3.1
RE1-4	3/4"		90				3.5				1,5	3.3
RE1-2	1"		105	144	58		4.1	5.7	2.3		1,9	4.2

3. Installation

3.1. The pressure reducing valve should be installed in a horizontal pipe with the handle turned upwards.

3.2. The length of the straight section of the upstream piping and the length of the straight section of the downstream piping should be each at least 10 pipe diameters.

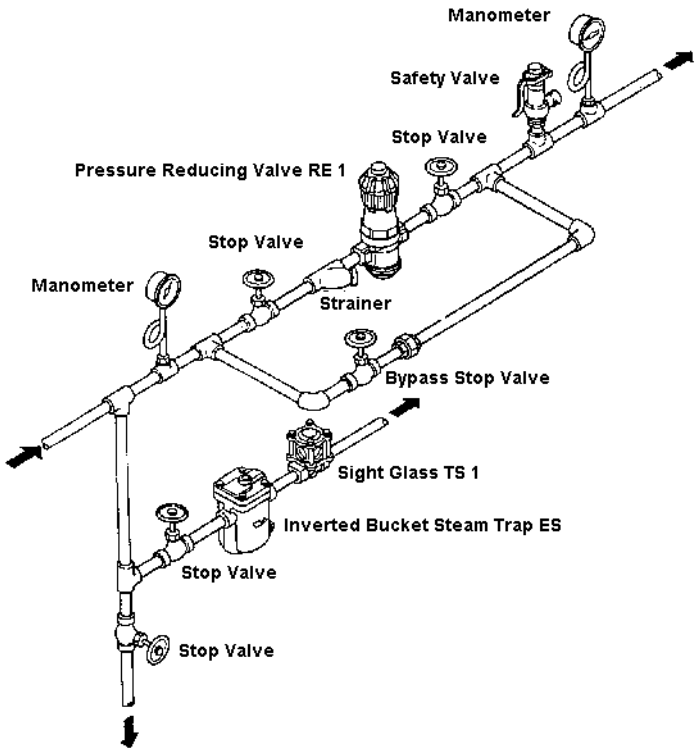
3.3. The pressure reducing valve should be protected with a strainer. The strainer should be installed in such a way that the screen will point sidewards to avoid the accumulation of condensate in the area of the screen.

3.4. To prevent water hammer and vibrations caused by incoming condensate it is necessary to install a steam trap before the pressure reducing valve.

3.5. Select the size of the pressure reducing valve according to the real operating conditions. Don't use a too large pressure redicing valve.

3.6. It is recommended to install a manometer, a stop valve and a strainer upstream and a manometer, stop valve and safety valve downstream.

3.7. If you will use a motor valve or solenoid valve downstream (dead end service), install a steam trap between the pressure reducing valve and these valves to prevent water hammer or misfunctions at the time of start-up.



4. Adjustment of the RE 1

4.1. After the installation and before the adjustment of the pressure reducing valve close the stop valves before and behind the pressure reducing valve and open the bypass to remove all condensate and dirt from the pipe.

4.2. Close the bypass valve and pull the green handle while the stop valves are closed. Turn the handle clockwise until the handle will touch the cover.

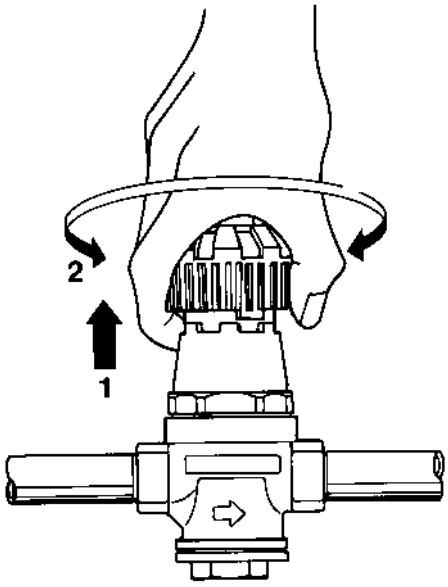
4.3. Open the stop valve downstream slightly. Than open the stop valve upstream slowly.

4.4. Pull out the handle again and turn it counterclockwise until the required pressure is attained.

4.5. Release the handle so that it will engage.

4.6. Now, open the stop valve downstream completely and check again the setted pressure.

4.7. In case of a shut-down of the equipment the stop valve downstream must be closed at first. The stop valve upstream is to be closed as a second step. When the equipment will start up again open the stop valve downstream at first and than open the stop valve upstream slowly.



5. Maintenance

5.1. Replacement of Valve and Valve Seat

a) Unfasten the body plug (3) and take out the screen (17) ; then remove the spring (16) and the valve (4).

b) Unscrew the valve seat (5).
Take out the gasket (21) .

c) Replace the gasket (21) and fasten the valve seat (5) .
(spanner size: 24 mm; torque: 600 kgf·cm)

d) Put the valve (4) on the spring (16) and insert it into the screen (17). Replace the gasket (20) and fasten the body plug (3) .
(spanner size: 30mm; torque: 800 kgfcm)

5.2. Cleaning up the screen

a) Unfasten the body plug (3) and take the screen (17) out (same as 5.1.a)

b) Clean up the screen (17).

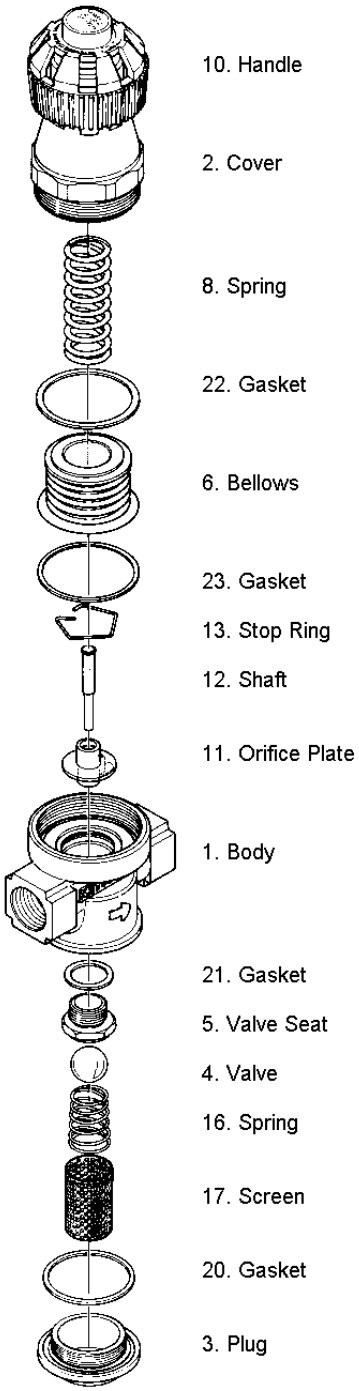
c) Assemble in the same way as .5.1.d).

5.3. Replacement of the bellow

a) Pull out the handle of the RE 1 (10) and turn it clockwise until stopping. Unfasten the cover (2) (spanner size: 58 mmm) and remove the spring (8), the bellow and holder (6 & 7).

b) Replace the gaskets 22 and 23 . Put the new bellow unit into the body (1) and put the spring (8) on the holder (7). Now fasten the cover again.
(torque: 1200 kgf·cm)

CAUTION ! Never open the pressure reducing valve when under pressure.



6. Trouble shooting

A. The downstream pressure doesn't meet the set value:

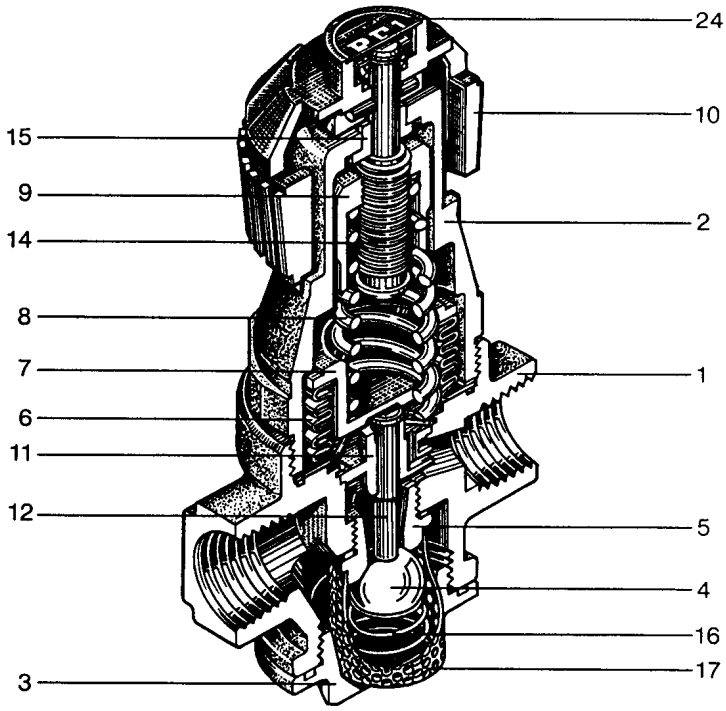
Possible cause	**Solution**
a. Pressure was set incorrectly.	a. Check and set again.
b. Wrong selection of the PRV.	b. Check and select again.
c. The upstream stop valve is closed.	c. Open the upstream stop valve.
d. The inlet pressure is lower than the set outlet pressure.	d. Check and correct.
e. The steam supply is lower than the downstream steam consumption.	e. Check and correct.
f. The screen is plugged.	f. Clean up the screen according to 5.2.

B. The downstream pressure is higher than the set value:

Possible cause	**Solution**
a. Wrong setting.	a. Check and set again.
b. Wrong selection of the PRV.	b. Check and select again.
c. The downstream stop valve is closed.	c. Open the stop valve.
d. The steam consumption is lower than the smallest possible steam flow.	d. Check and select a new PRV.
e. The bypass - stop valve is open.	e. Close the stop valve.
f. Dirt between valve and valve seat; damaged valve or valve seat.	f. Clean or replace the parts.
g. Damaged bellow unit .	g. Replace according to 5.3.

7. Valve details

Parts-No.	Name
1	Body
2	Cover
3	Plug
4	Valve
5	Valve seat
6	Bellows
7	Holder
8	Spring
9	Sleeve
10	Handle
11	Orifice plate
12	Shaft
14	Adjust bolt
15	Bush
16	Spring
17	Screen
24	Name plate



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