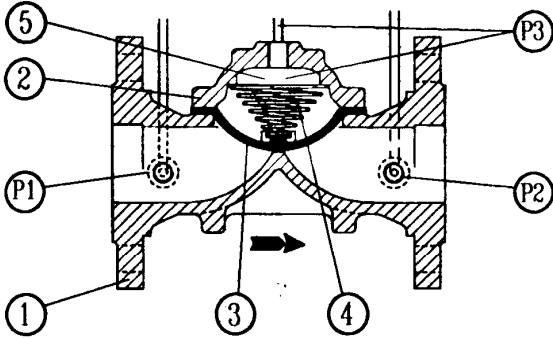




VALVOLE DI REGOLAZIONE  
CON PILOTA SERIE  
**MAXOMATIC**

ISTRUZIONE PER L'INSTALLAZIONE, IL FUNZIONAMENTO E LA MANUTENZIONE  
INSTRUCTION FOR INSTALLATION OPERATION AND MAINTENANCE



- |                                     |                               |
|-------------------------------------|-------------------------------|
| 1 - Corpo valvola principale        | 1 - Main valve body           |
| 2 - Coperchio valvola principale    | 2 - Main valve cover          |
| 3 - Membrana valvola principale     | 3 - Main valve diaphragm      |
| 4 - Molla valvola principale        | 4 - Main valve spring         |
| 5 - Camera molla valvola principale | 5 - Main valve spring chamber |
| 6 - Sede molla                      | 6 - SPRING WASHER             |
| 7 - Bulloni                         | 7 - BOLTS                     |
| 8 - Dadi                            | 8 - NUTS                      |

- |  |                                   |
|--|-----------------------------------|
| P1 - Pressione fluido entrante (monte) | P1 - Inlet pressure (upstream)    |
| P2 - Pressione fluido uscente (valle)  | P2 - Outlet pressure (downstream) |
| P3 - Pressione azionamento membrana    | P3 - Diaphragm operating pressure |

Per richiedere ricambi indicare il numero di matricola della valvole. / To ask for replacements mention the serial number of the valve.

RICAMBI CONSIGLIATI:  
Membrana per la valvola principale.

SUGGESTED SPARE PARTS  
Diaphragm for the Main valve.

COMPOSIZIONE E FUNZIONAMENTO

La valvola principale è costituita essenzialmente dal corpo (1) dal coperchio (2), dalla membrana (3) e dalla molla (4).

La membrana funge contemporaneamente da otturatore e, assieme alla molla, da attuatore. La sua sagomatura le consente di assumere qualunque posizione fra quella di chiusura e quella di massima apertura.

L'azione di comando si ha immettendo la pressione (P3) entro la camera (5) sopra la membrana.

**MANUTENZIONE** - Attenzione: por mano alla valvola solo dopo aver tolto pressione ed aver preso le precauzioni particolari prescritte sull'impianto.

Il corpo valvola, data la sua grande semplicità, richiede in genere pochissima manutenzione.

Un controllo dello stato delle superfici interne può farsi smontando il coperchio e la membrana.

Se smontare la valvola dalla tubazione non presenta difficoltà si può ispezionare l'interno anche attraverso le bocche di entrata e di uscita.

Se il fluido controllato trascina polveri fini o melma suscettibili di depositarsi, si potrebbero nel lungo periodo formare dei depositi entro la camera sulla membrana. Mediante controlli iniziali stabilire la periodicità opportuna per effettuare lo smontaggio del coperchio e la pulizia della camera.

Se le condizioni di esercizio sono corrispondenti a quelle citate in ordinazione, la membrana avrà lunga durata.

COMPOSITION AND OPERATION

The main valve essentially includes the body(1), the cover(2), the diaphragm(3) and the spring(4).

The diaphragm operates at the same time as a shutter and, together with the spring, as an actuator. Its shaping allows it to assume any position between full closing and maximum opening, using the pressure differential between the valve inlet and outlet to set up the deformation effort.

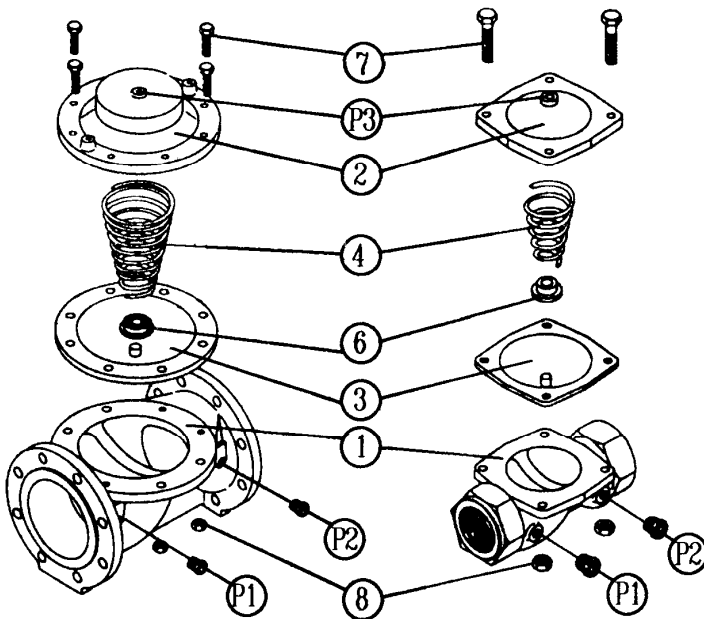
It exerts its regulating action by modulating the pressure within the chamber(5) over the diaphragm between values close to the upstream ones and values close to the downstream ones.

**MAINTENANCE** - Warning: relieve pipe line pressure and take all the specific precautions suggested or ordered on the plant prior to starting any handling or disassembling of the valve.

The valve body, due to simplicity of its design, requires very little maintenance. The internal surfaces may be checked for cleanliness or possible wear by disassembling the cover and the diaphragm. If taking the valve off the line is not difficult, the internal may be inspected through the inlet and outlet of the valve.

If the line medium conveys sand or lime, a deposit could form in the long time in the chamber on the diaphragm. It will initially be necessary to open the valve from time to time in order to fix the appropriate interval between two inspections for cleaning.

If the operating conditions do conform with the order ones, the diaphragm will be long lasting.



# INSTALLATION AND OPERATING INSTRUCTIONS

## TEMPERATURE REGULATORS

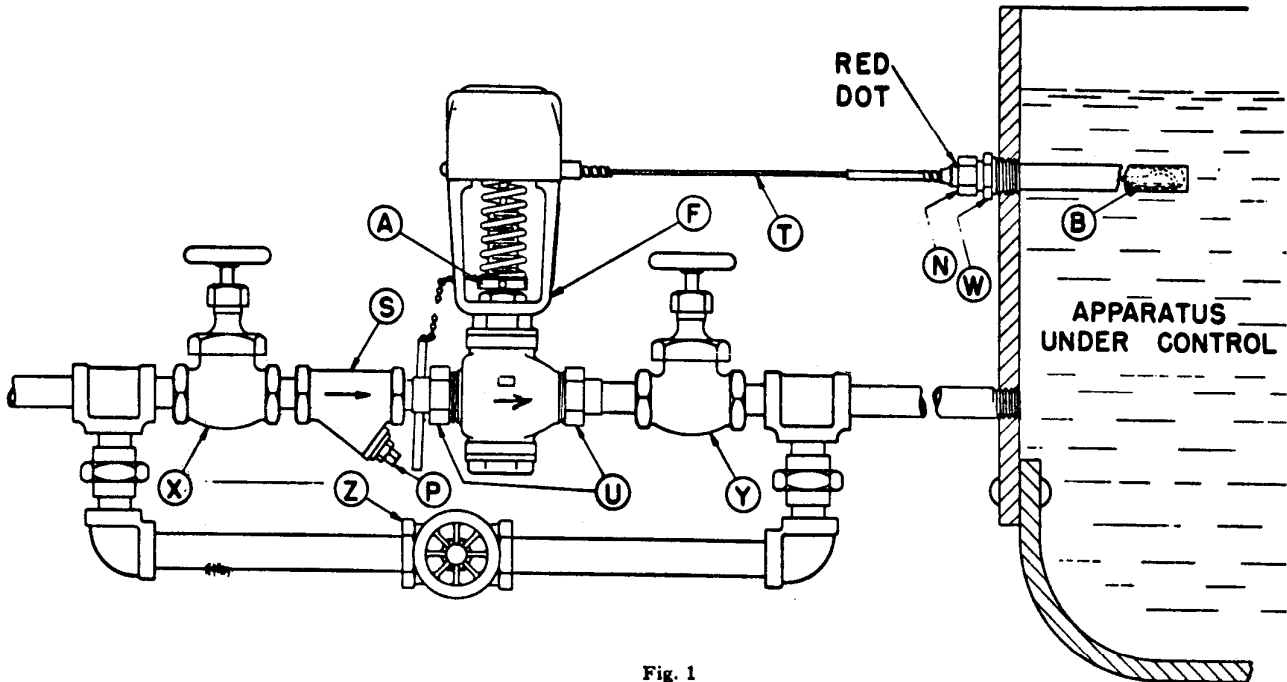


Fig. 1

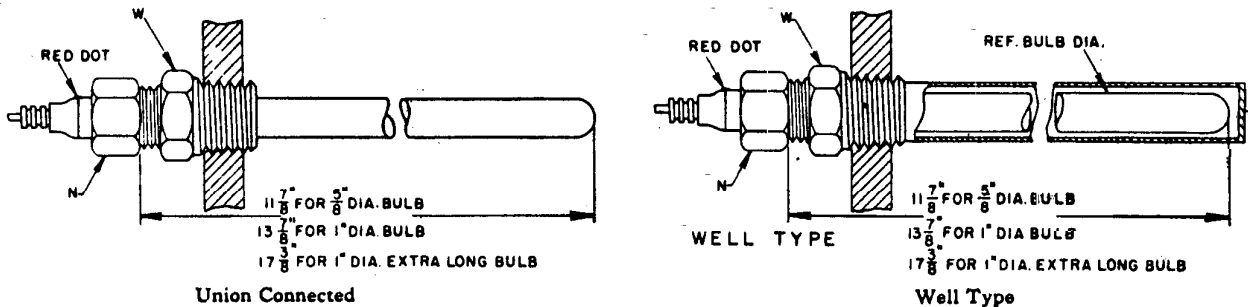


Fig. 2

### VALVE AND STRAINER CONNECTIONS

The valve should be placed so that the heating or cooling medium will flow through it in the direction of the arrow cast on the valve body. A strainer "S" should be placed ahead of the valve. (see Fig. 1)

To avoid stresses on the valve or unions, the connecting pipes should be cut to the exact length required and should be in correct alignment.

To connect the valve, remove the unions "U" from the valve body and attach them to the nipples on each side of the valve. When tightening the unions to the Regulator Valve use two wrenches. Never use the Regulator Frame "F" for leverage.

Hand valves "X" and "Y" with by-pass and hand valve "Z" are found convenient on some installations.

### BULB CONNECTION

The location of the bulb should be chosen carefully so that the temperature of the medium around the bulb or well will be representative of the entire body of fluid being heated or cooled.

When large volumes of oil are being heated it may be necessary to place the bulb near the heating coils to avoid dangerous hot spots which would result if the bulb was remote from the heating coils.

Plain bulbs, without the union fittings, are used in open tanks, ovens, drying rooms, kilns, etc. The bulb on these installations should be suspended vertically, pointing downward, and held securely by suitable straps or clamps. If the application requires that the bulb be held in a horizontal position, the free end of the bulb must not be higher than the fixed end, and the red dot on bulb must be upward. If the free end of the bulb must be above the fixed end, a special bulb construction is required.

Union connected bulbs should have their entire effective length totally immersed in the medium to be regulated. This length is set at the factory, as shown in figure 2, and should be maintained during installation and use.

When a well is used the bulb should be coated with a heat conducting medium such as a mixture of graphite and glycerine or high temperature grease. This improves the speed of response of the regulator.

To assemble union connected or well type bulbs, remove the union bushing or well "W" from the bulb by releasing the jam nut "N".

Attach the union bushing or well tightly to the equipment.

Insert the bulb into the bushing or well making sure first that the insertion depth corresponds to figure 2. After the bulb is inserted, position it so that the red dot on the bulb is upward, then tighten the jam nut "N" to secure the bulb to the union bushing or well.

### TO START REGULATOR

After the installation is completed, open the hand valves "X" and "Y" wide and close the by-pass valve "Z" (if a by-pass is used). Unless otherwise specified, the regulator is shipped from the factory with the adjustment nut "A" at its lowest position and must therefore be raised to the desired control setting. When the temperature, for which the regulator has been set, is reached, it will be maintained automatically.

The accompanying table gives the approximate temperature equivalent for all the scale settings of each temperature range. The values given in the table are not absolute. They will vary from one regulator to another because of manufacturing tolerances.

On the initial starting the controlled temperatures may overshoot slightly then drop back. Allow sufficient time for the process to stabilize before checking the controlled temperature and making finer adjustments.

Table of Approximate Temperature Equivalents for Various Scale Settings of Regulators

Regulator Scale Setting	FAHRENHEIT RANGES													
	-15/50	-15/75	45/115	45/145	65/140	65/170	90/165	90/195	130/200	130/230	160/240	160/275	240/310	240/340
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	-15	-12	45	50	65	70	90	93	*	*	160	162	236	240
2	-3	5	58	70	80	91	103	114	127	148	173	187	250	267
3	8	22	77	87	92	108	116	132	143	167	190	203	265	281
4	18	35	81	102	103	125	127	147	159	183	201	223	275	296
5	26	45	92	114	114	137	138	159	168	197	212	237	285	308
6	34	55	101	124	124	147	146	170	178	209	222	249	295	318
7	40	63	108	135	131	158	153	180	188	221	231	261	303	329
8	47	77	115	143	138	167	160	189	196	231	239	272	310	337
9	53	80	122	152	145	177	168	198	205	241	247	282	317	347
10	58	86	129	158	157	183	173	206	211	249	255	290	322	353

Regulator Scale Setting	CENTIGRADE RANGES													
	-25/10	-25/20	10/45	10/60	20/60	20/75	35/70	35/90	55/90	55/110	70/115	70/135	115/155	115/170
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	-26	-24	7	10	18	21	32	34	*	*	71	72	113	116
2	-19	-15	14	21	27	33	39	46	53	64	78	86	121	131
3	-13	-6	22	31	33	42	47	56	62	75	88	95	129	138
4	-8	2	27	39	39	52	53	64	71	84	94	106	135	147
5	-3	7	33	46	46	58	59	71	76	92	100	114	141	153
6	1	13	38	51	51	64	63	77	81	98	106	121	146	159
7	4	17	42	57	55	70	67	82	86	105	111	127	151	165
8	8	25	46	62	59	75	71	87	91	111	115	133	154	169
9	12	27	50	67	63	81	76	92	96	116	119	139	158	175
10	14	30	54	70	69	84	78	97	100	121	124	143	161	178

\* Control points at these settings are slightly below the low end of the regulator range.

### MAINTENANCE

The adjusting nut "A" of each regulator is permanently lubricated before leaving the factory, and the valve stem is equipped with a spring loaded Teflon packing gland assembly so that no maintenance should be required for the life of the regulator.

The valve stem is set and locked at the factory in a permanent position to give the valve its proper travel. No adjustment should ever be made on the valve stem

after the regulator leaves the factory.

The strainer "S" protects the valve disc and seat of the regulator valve from the destructive effects of scale, etc. The strainer should be blown out at regular intervals by removing the plug "P". For quick blow-outs, a hand valve may be installed on the strainer in place of the plug "P".

The strainer screen should be removed occasionally for inspection, cleaning, or renewal.



VALVOLE E STRUMENTAZIONE

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