



# Pressure Differential Controls TD56-2

## Instructions



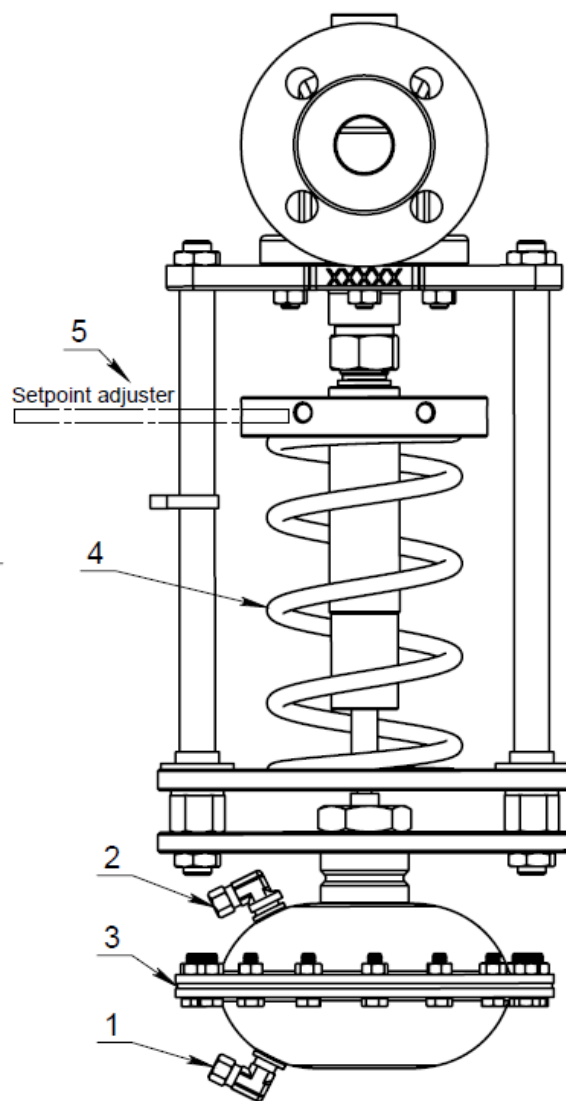


Fig. 1A

## DK

1. Nedre kammer nippelbøsning
2. Øvre kammer nippelbøsning
3. Gummi membran
4. Fjeder
5. Justering af setpunkt

## GB

1. Lower chamber fitting
2. Upper chamber fitting
3. Rubber diaphragm
4. Spring
5. Setpoint adjuster

### Ventil tilslutning

Clorius TD56-2 leveres monteret på ventilen.

TD56 aktuatoren skal altid monteres i en lodret position under ventilen.

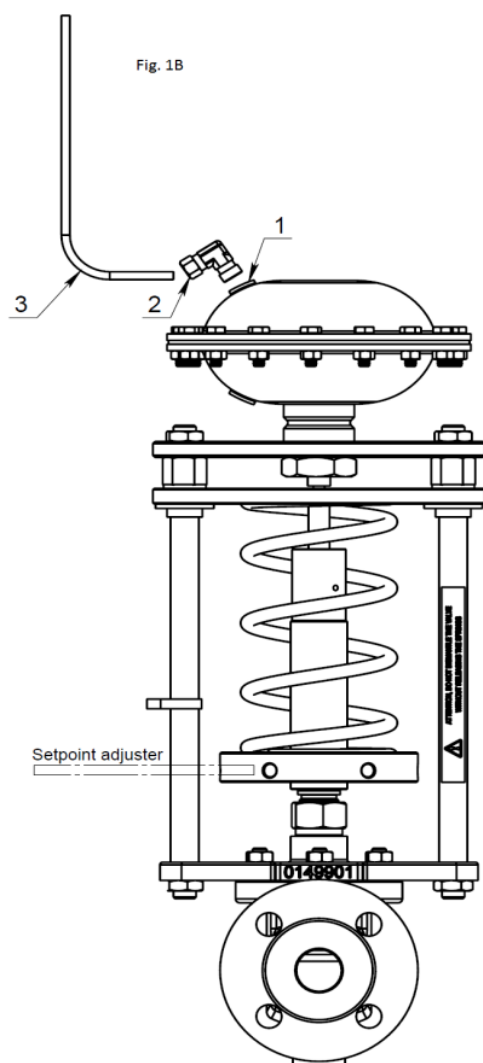
### Fyldning af aktuatoren

Før montage fyldes **vand** på TD56 aktuatoren gennem begge tilslutninger til kapillarrør. Hvis mediet i applikationen er anden væske end vand så kontakt Clorius Controls før påfyldning. Det er **yderst vigtigt** at der er fyldt væske på begge sider af gummi membranen. Hvis der kun er fyldt væske på det øvre kammer, position 2, vil membranen blive ødelagt af trykket. (Fig.1A)

### Vejledning i korrekt væskepåfyldning.

#### Trin 1:

TD 56 vendes således, at ventilen er under aktuatoren (Fig.1B)



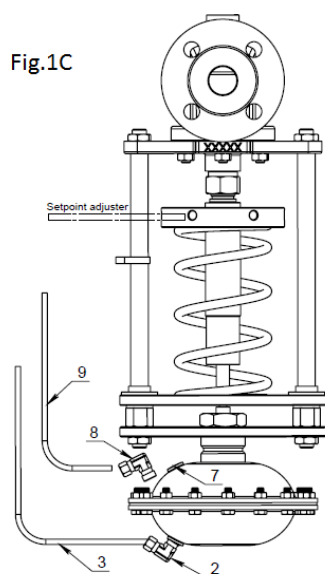
Der fyldes væske på det nedre kammer via hullet, pos.1. Kammeret skal være helt fyldt. Nippelbøsning pos.2 og kapillarrør pos.3 monteres herefter. Vær varsom med, at væsken forbliver i kammeret herefter. Dette sikres ved at kapillarrøret drejes så det peger opad.

### Vejledning i korrekt væskepåfyldning.

#### Trin 2:

TD56 vendes herefter om, således at ventilen er over aktuatoren. Se Fig.1C

Vær varsom med at den allerede påfyldte væske ikke løber ud. Dette sikres ved, at kapillarrør pos.3 drejes så det får en position pegende opad.



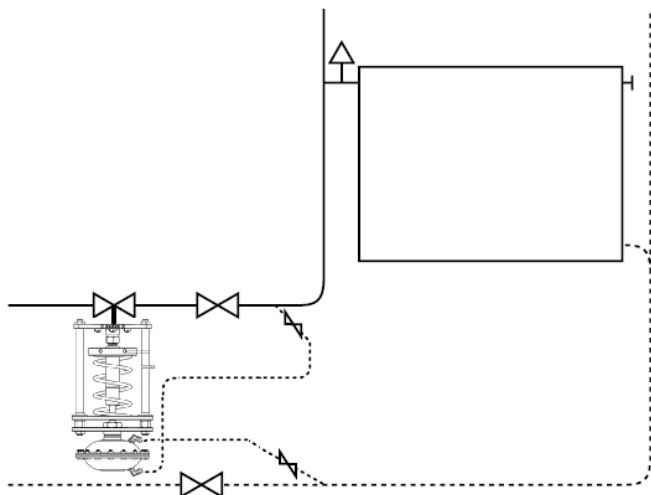
Herefter fyldes det øvre kammer med væske via hullet pos. 7. Kammeret fyldes helt op, hvorefter nippelbøsning pos.8 og kapillarrør pos.9 monteres. Vær varsom med at det påfyldte væske ikke løber ud. Dette sikres som i Trin 1 ved at dreje kapillarrøret opad.

#### Montage af TD

TD regulatoren kan først herefter monteres i fremløbs- eller returløbet, afhængigt af den ønskede virkning. Se evt. datablad 3.9.01

Der bør monteres afspærringsventil omkring TD regulatoren. Ved anbringelse af afspærrings- ventiler skal de indsættes på en sådan måde, at TD regulatorens membran ikke overbelastes, når afspærringsventilen lukkes. Se fig. 2.

#### FIG 2



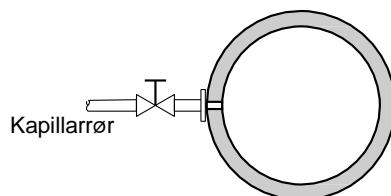
### Montage af kapillarrør

Kapillarrørene leveres med 1/4" nipler og omløber. Det anbefales at montere nålventiler som afspærringsventil ved tilslutning til frem- og returledningen.

Kapillarrørene forbindes således at det højeste tryk (fremløb), altid tilsluttes den membranside hvor justeringen af differensstryk foretages (nedre kammer). Det laveste tryk (retur) skal altid forbindes til membransiden nærmest ventilen (øvre kammer). Se Fig. 2.

For at undgå at luftblærer og snavs fra anlægget kommer ind i kapillarrørene, bør kapillarrørene tilsluttes vandret på fremløb og retur rør. Se fig. 3.

Fig. 3



### Idriftsætning og indstilling af differensstryk

Stopventilerne åbnes simultant langsomt og forsigtigt for at sætte tryk på begge sider af membranen. Det er meget vigtigt at der ikke kun sættes tryk på den ene side af gangen, da membranen vil blive ødelagt. Trykdifferensen over membranen må aldrig overstige det setpunktstryk som er opgivet i Clorius Controls datablad nr. 3.9.06.01.

TD56 regulatoren indstilles til det ønskede setpunkt ved at dreje på Pos.5.

Trykdifferensen øges ved at dreje højre rundt indtil det ønskede differensstryk aflæses på manometer.

Hvis differensstrykket er for højt kan det mindskes ved at dreje venstre rundt indtil det korrekte setpunkt aflæses på manometeret.

### Pasning

Der skal til daglig ikke foretages justering af differensstrykket. Kun hvis vandmængden eller differensstrykket permanent er for stort eller for lille, foretages der ændring af indstillingen.

### Fejlfinding

Fejl 1: Der strømmer for meget vand gennem ventilen.

Mulig årsag:

1. Alle eller en del af radiatorventilerne er helt åbne.
2. Kortslutning gennem varmtvandsbeholderen (termostat evt. defekt.)
3. Snavs i TD regulatorens ventil.
4. Kapillarrør er tilsluttet omvendt.
5. Kapillarrør fra fremløb er tilstoppet.
6. TD-regulatoren er indstillet til et for højt differensstryk.

Fejl 2: Intet eller for lidt vand gennem ventilen.

Mulig årsag:

1. Værkets pumper er stoppet eller yder for ringe differensstryk ved stikledningen.
2. Hovedafspærringsventilen lukket.
3. Snavssamler eller si i måler tilstoppet.
4. Kapillarrør tilsluttet fremløbsledning før TD- regulator.
5. Alle radiatorventiler lukket.
6. Snavs i TD-ventil.
7. Kapillarrør fra returledning stoppet.
8. TD-regulator er indstillet til et for lavt differensstryk.

### Defekt membran

Er reguleringen ophørt og er temperaturen på kapillarrørene og regulatoren den samme som fremløbstemperaturen, er det tegn på at fremløbsvandet passerer gennem en defekt membran til returledningen.

Membran er utæt og skal derfor udskiftes.

**Valve connection and mounting of TD.**

The Clorius TD56-2 is mounted on the valve prior to delivery and should not be disassembled. The TD56 actuator must always be mounted in a vertical position below the valve.

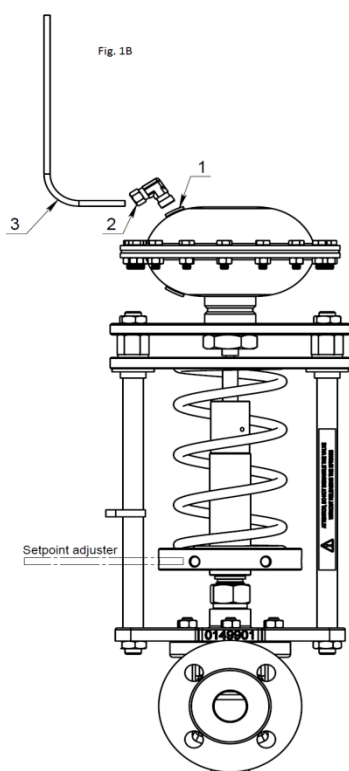
**Filling of the actuator**

Prior to installation of the TD56, the actuator must be filled with water through both capillary fitting openings (Fig.1A - Pos.1 & 2).

If the application media is oil or other fluids please contact Clorius Controls for approval before filling the actuator. It is extremely important that both sides of the rubber diaphragm is filled with liquid before start up. If only liquid has been filled on the upper chamber through Pos.2 the pressure can cause severe damage to the diaphragm.

**Guide to correct liquid filling of the actuator****Step 1:**

TD 56 is turned so that the valve is pointing downwards and the actuator is pointing upwards (Fig. 1B).

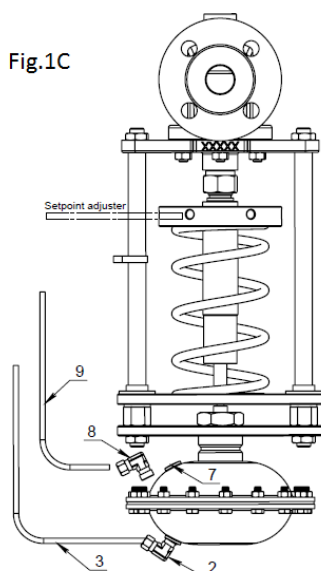


Liquid is filled on one side of the chamber (lower chamber) via the opening, Pos.1. The chamber must be completely filled. Fitting Pos.2 and capillary tube Pos.3 is then mounted. Be careful that the liquid remains inside the chamber. This is ensured by turning the capillary tube so that the tube is pointing upwards.

**Step 2.**

TD 56 is turned so that the valve is pointing upwards and the actuator is pointing downwards (Fig. 1C).

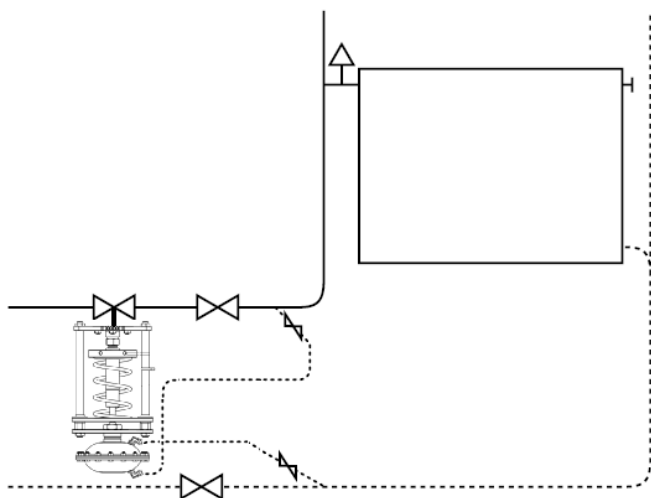
Be careful that the liquid remains inside the chamber. This is ensured by turning the capillary tube Pos.3 so that the tube is pointing upwards.



Liquid is filled on the other side of the chamber (upper chamber) via the opening, Pos.7. The chamber must be completely filled. Fitting Pos.8 and capillary tube Pos.9 is then mounted. Be careful that the liquid remains inside the chamber. This is ensured by turning the capillary tube so that the tube is pointing upwards.

**Mounting of TD**

The TD the regulator can only then be mounted on flow or return line, depending on the function required. See datasheet 3.9.01. Shut-off valves should be installed around the TD regulator. When placing shut-off valves they must be inserted in such a way that the regulator diaphragm is not overloaded when the shut-off valve is closed. See Fig.2

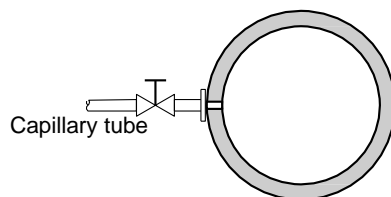
**FIG 2**

### Mounting of capillaries

The capillaries have 1/4" nipples and union nuts. It is recommended to mount needle valves as shut-off valves at the connection point for flow and return pipes. The capillaries are to be connected in such a manner that the highest pressure (forward flow) is always connected to the diaphragm side where the differential pressure adjustment is made (lower chamber). The lowest pressure (return) is always to be connected to the diaphragm side closest to the valve (upper chamber). See fig. 2.

To prevent air bubbles and dirt from the system from entering the capillaries they should always be fitted horizontally in flow and return pipes. See fig. 3.

Fig. 3



### Start-up and setting of differential pressure

Shut-off valves are opened simultaneously slowly and carefully in order to put pressure on both sides of the diaphragm. It is very important to not only put pressure on one side at a time because this will destroy the diaphragm.

The differential pressure across the diaphragm must never exceed the set point pressure which is shown in the Clorius Controls data sheet no. 3.9.06.01.

The TD56 regulator is adjusted to the desired set point by turning setpoint adjuster Pos.5

The differential pressure is increased by turning the adjuster right way around until the desired differential pressure is read on the manometer.

If the differential pressure is too high, it can be reduced by turning the adjuster left way around until the correct set point is read on the manometer.

### Maintenance

It is unnecessary to adjust the differential pressure daily. Only if the water quantity or the differential pressure is permanently too high or too low, the setting has to be adjusted.

### Troubleshooting

#### Fault 1: Too much water flowing through the valve.

Possible cause:

1. All or some of the radiator valves are fully open.
2. Short-circuiting through the hot water tank (thermostat possibly defective).
3. Dirt in the valve of the TD controller.
4. Capillaries are fitted reversely.
5. Capillaries from forward flow are clogged.
6. The TD controller is set at a too high differential pressure.

#### Fault 2: No water or too little water flowing through the valve.

Possible cause:

1. The pumps of the waterworks are clogged or provide too little differential pressure at the branch pipe.
2. Main shut-off valve is closed.
3. Dirt trap or sieve in meter is clogged.
4. Capillaries are fitted in forward flow pipe upstream of TD controller.
5. All radiator valves are closed.
6. Dirt in TD valve.
7. Capillaries from return pipe are closed.
8. The TD controller is set at a too low differential pressure.

### Defective diaphragm

If the controllers have ceased to function and the temperature in the capillary pipes and the controller is the same as the flow temperature this is an indication that the flow water is passing through a defective diaphragm to the return pipe. The diaphragm is destroyed and therefore has to be replaced.