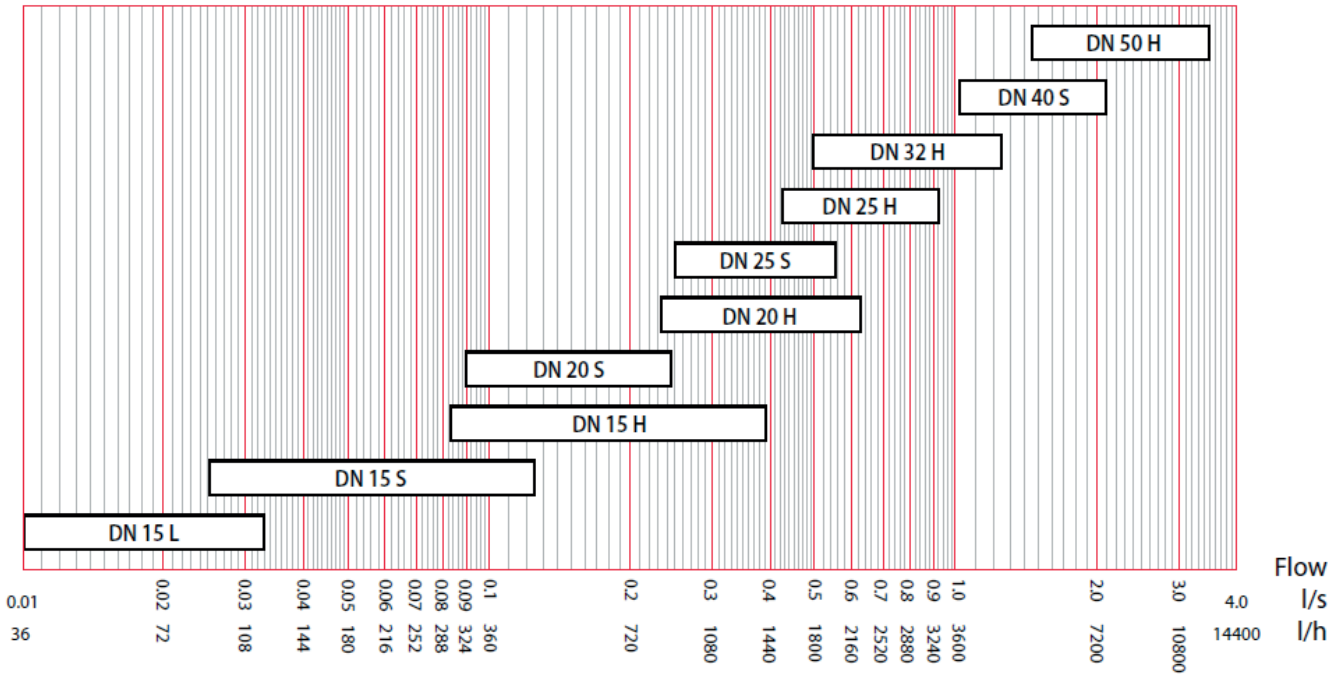
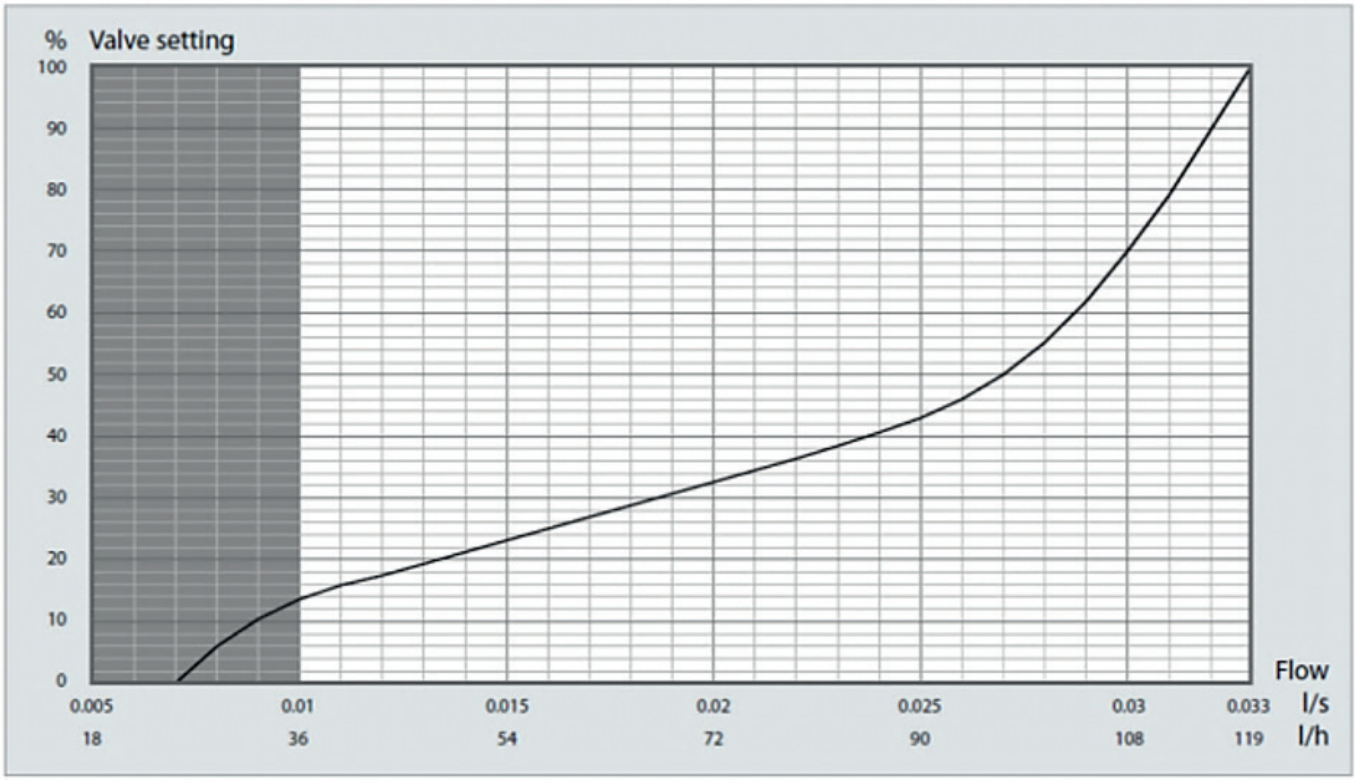
## Quick selection chart




## DN 15L female/female-Flow diagram

**Black line**

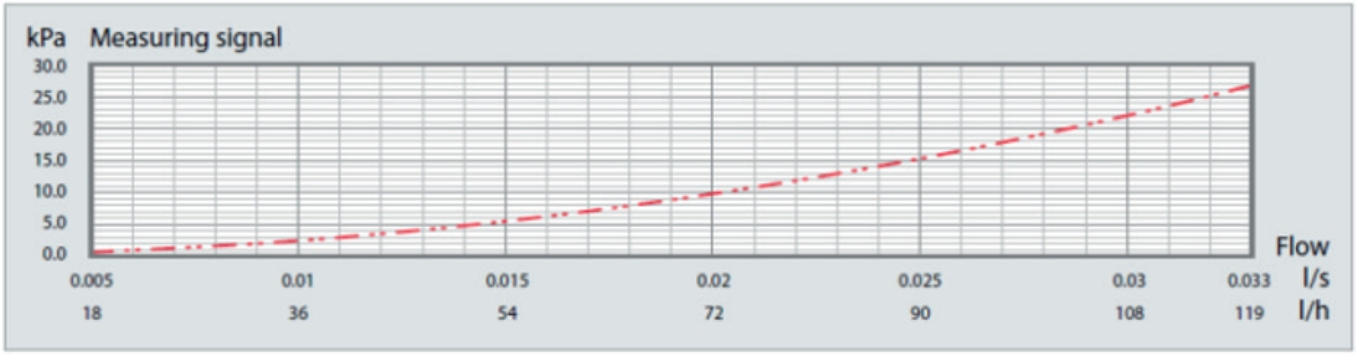
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.



The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

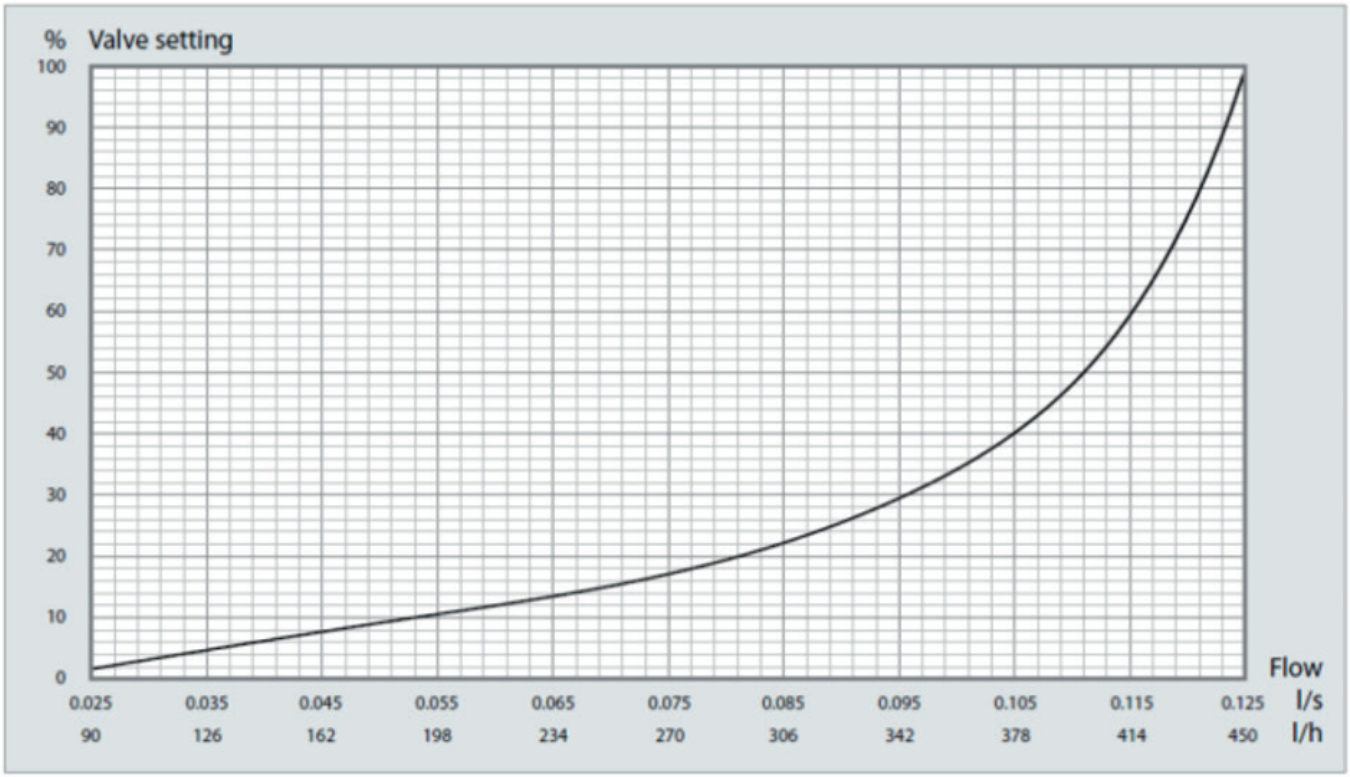
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning




## DN15 S

**Black line**

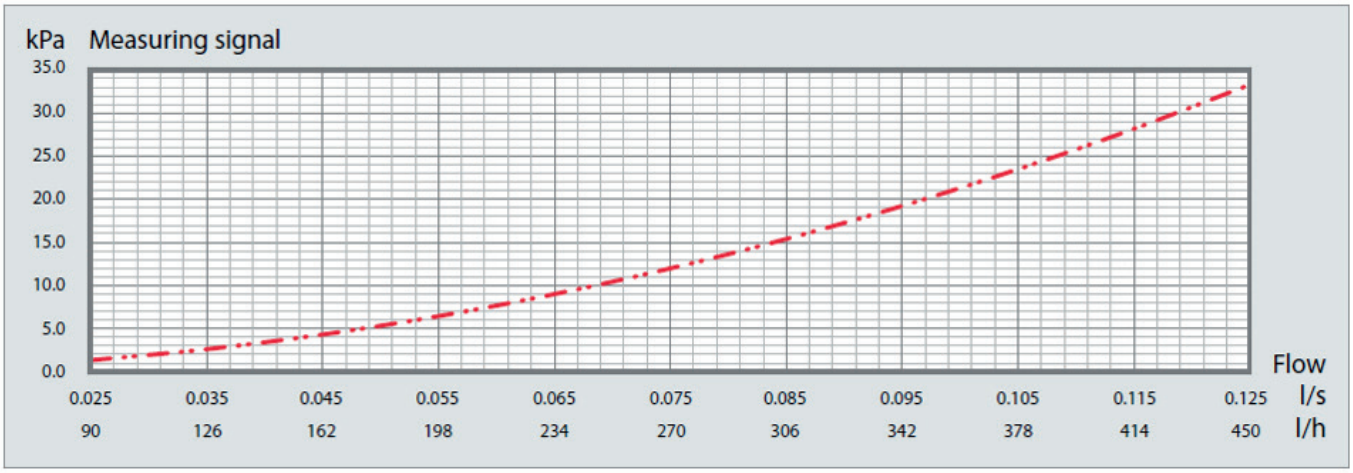
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

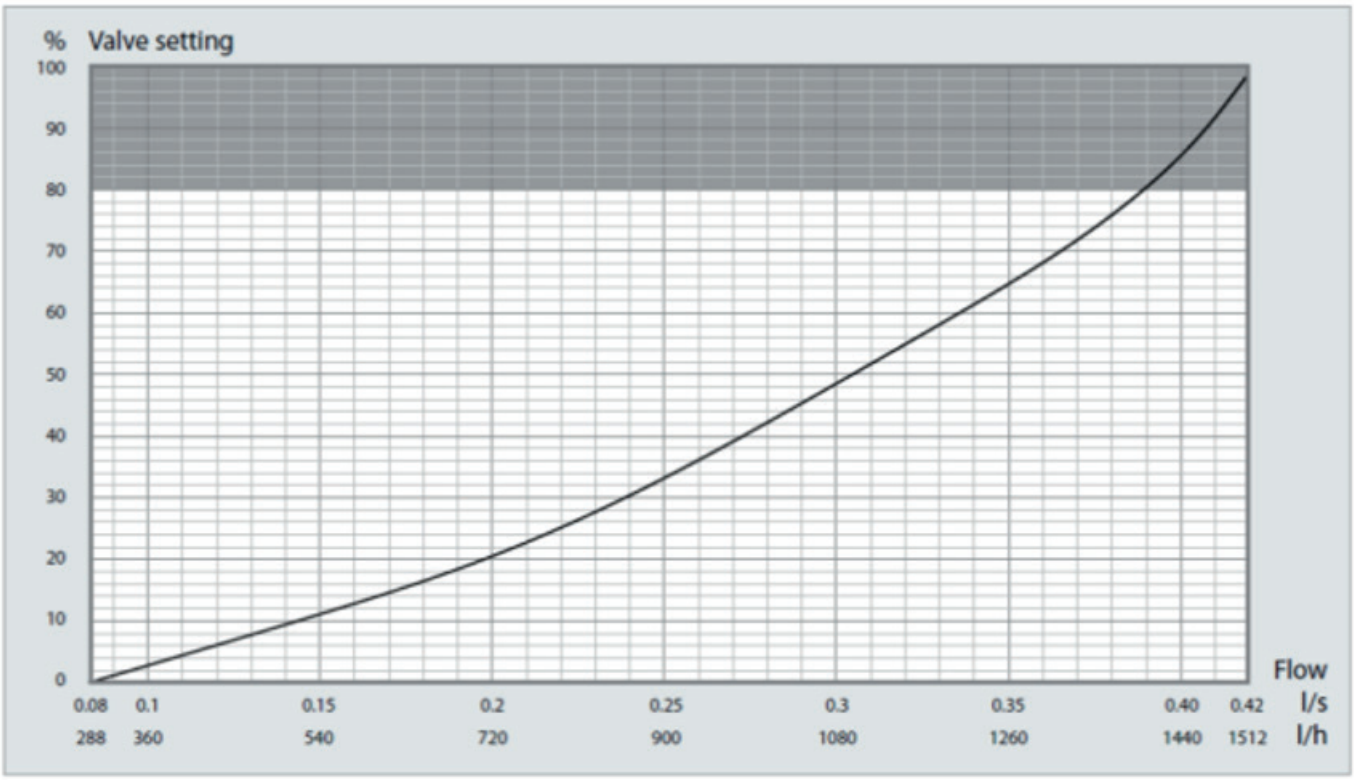
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN15 H

**Black line**

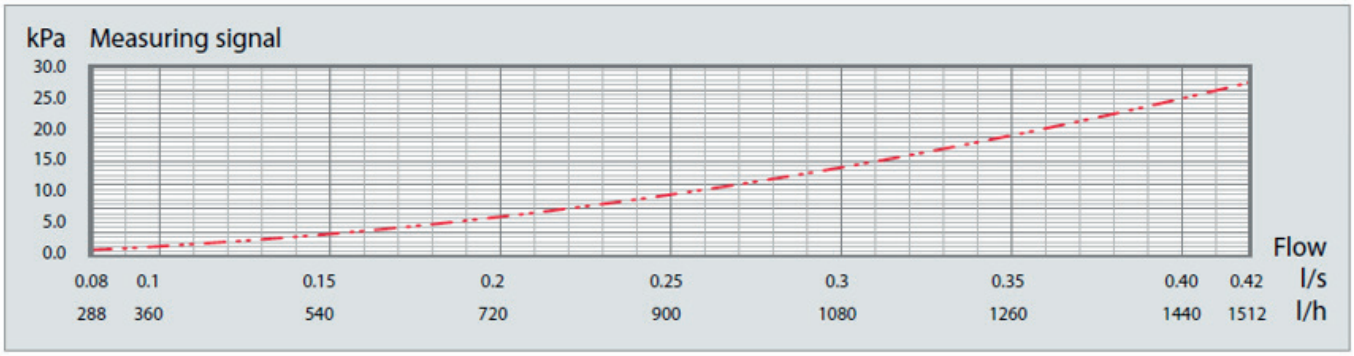
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

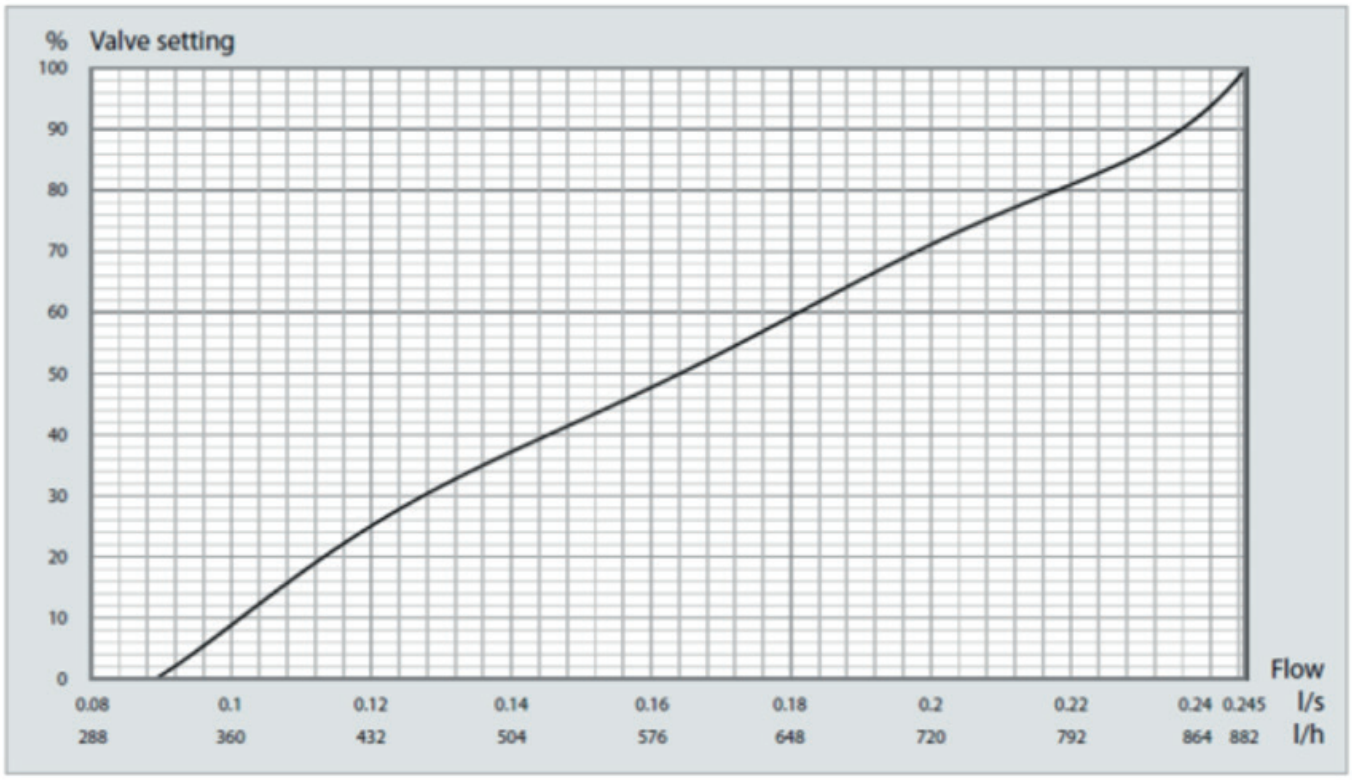
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN20 S

**Black line**

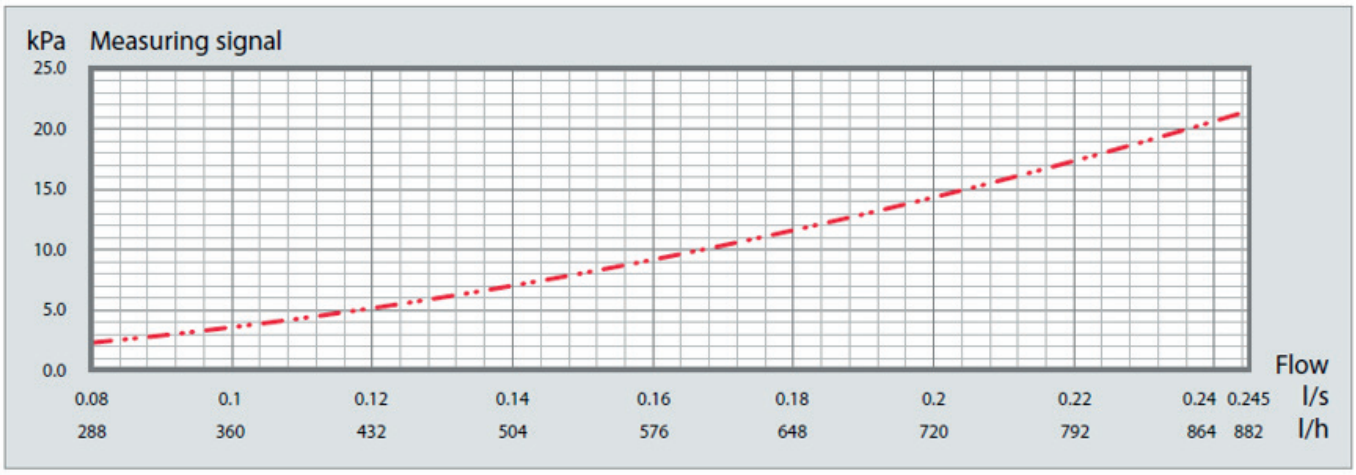
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

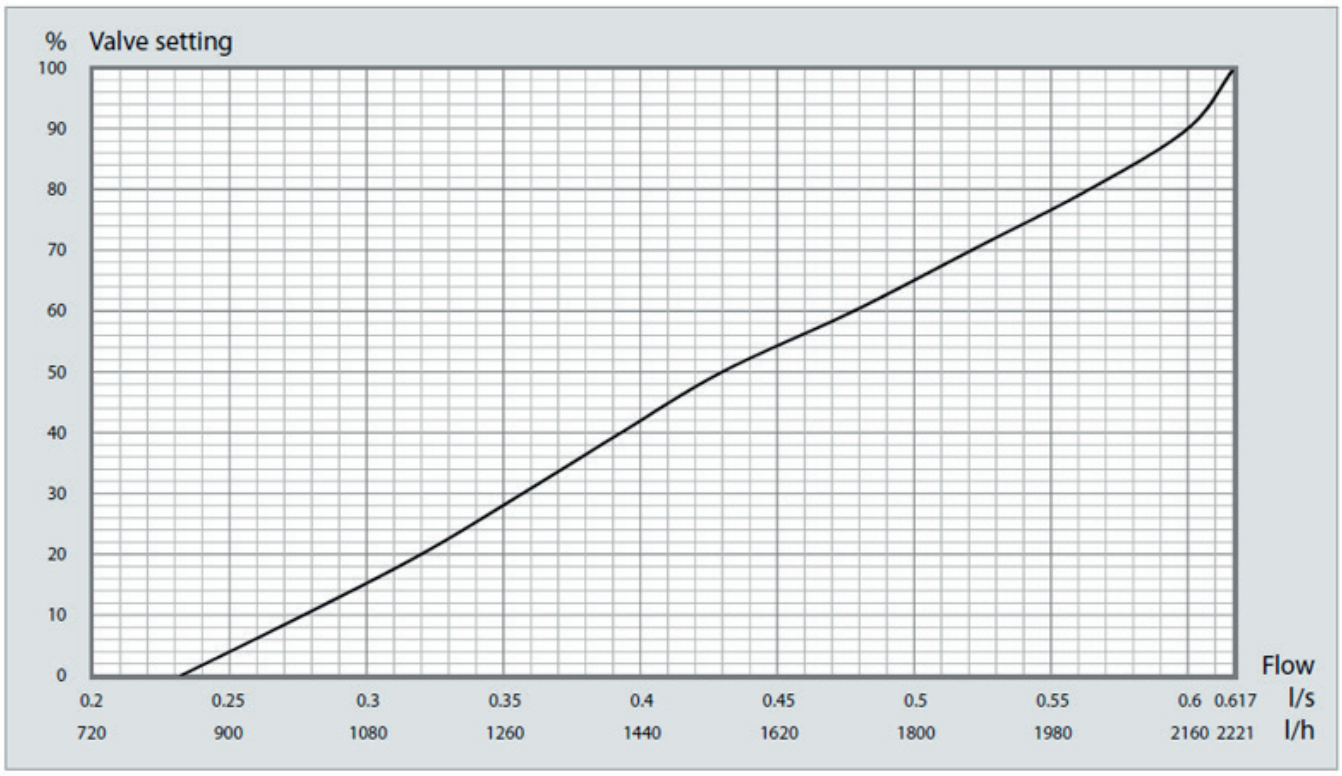
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning




## DN20 H

**Black line**

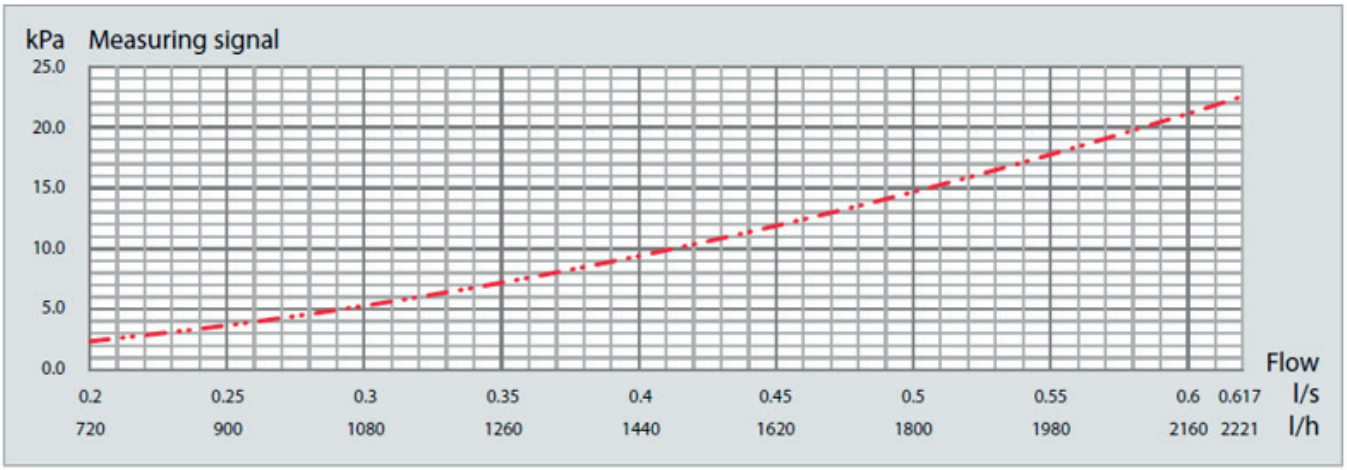
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

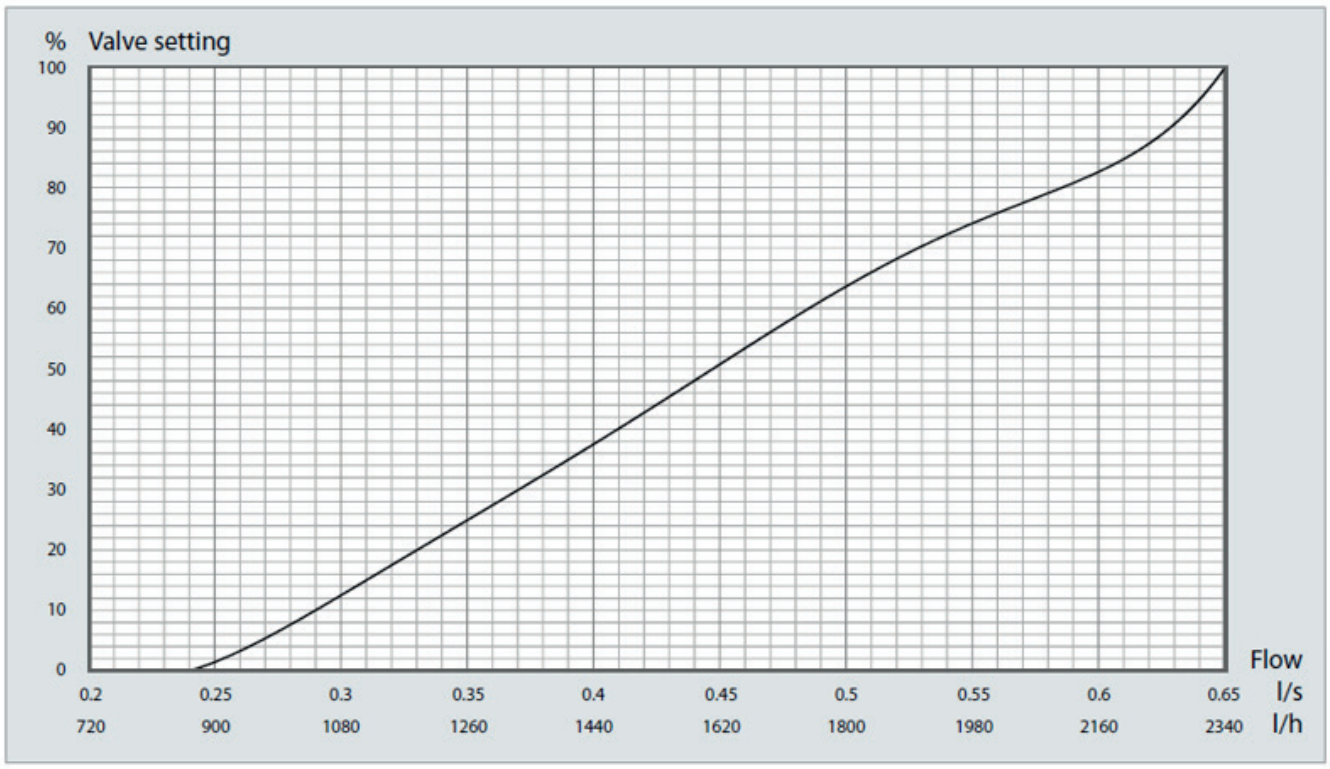
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN25 S

**Black line**

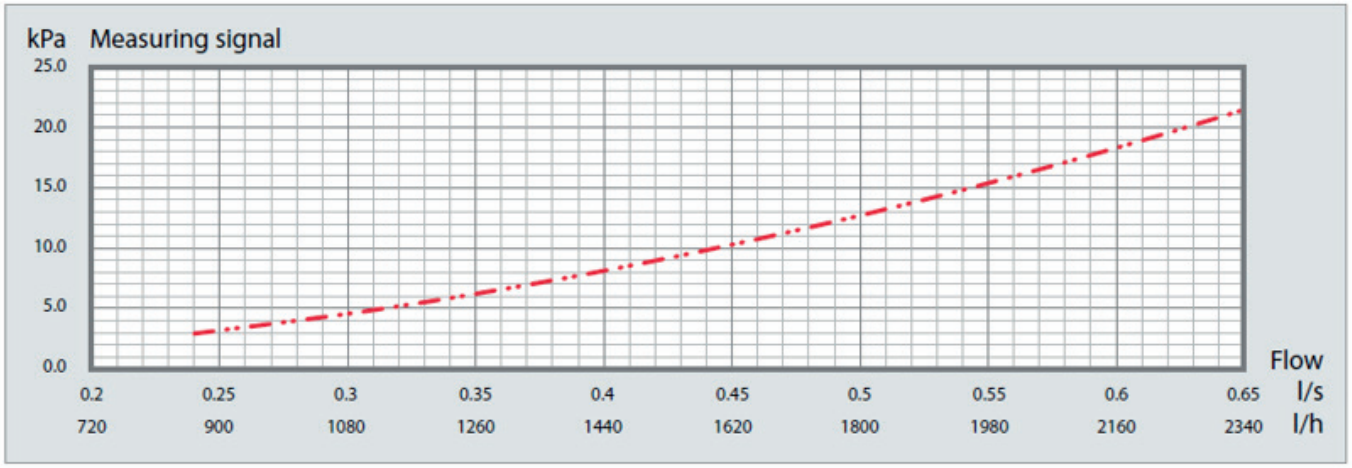
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

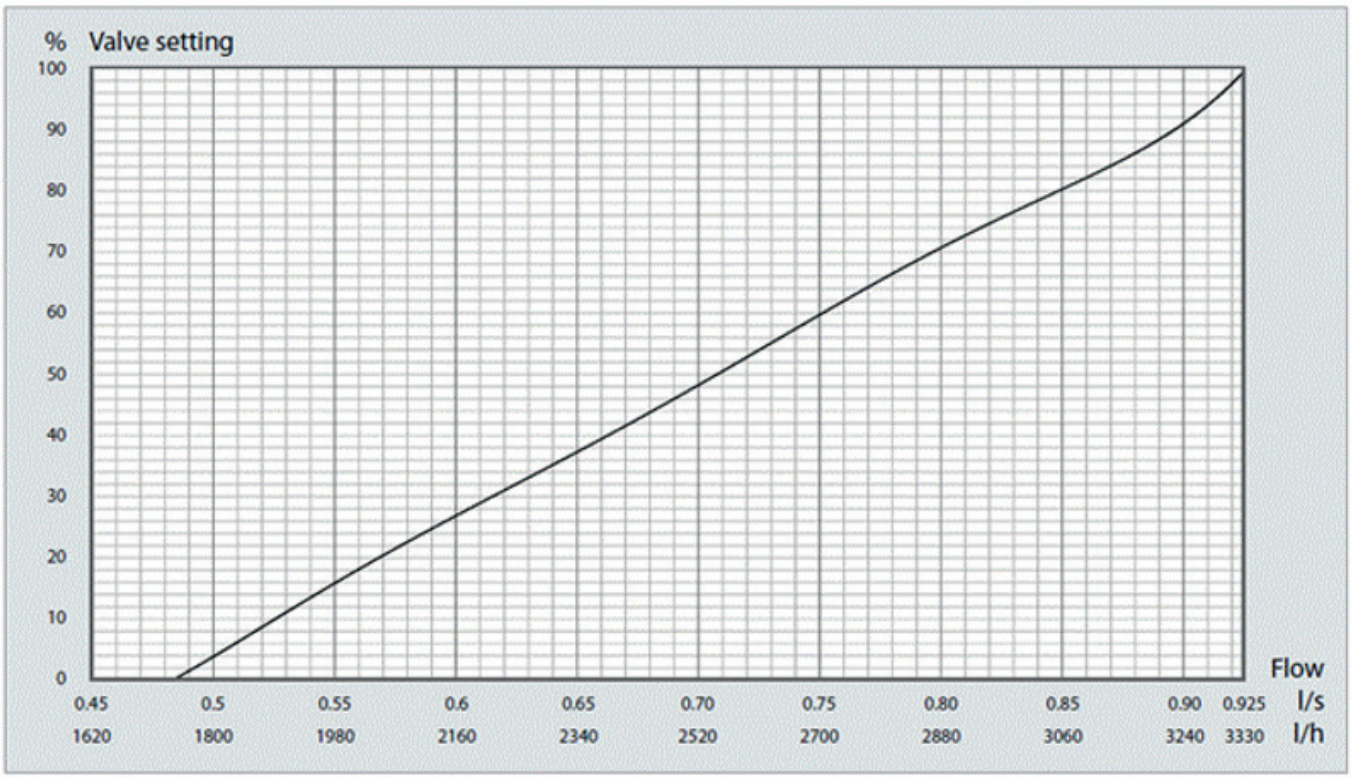
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN25 H

**Black line**

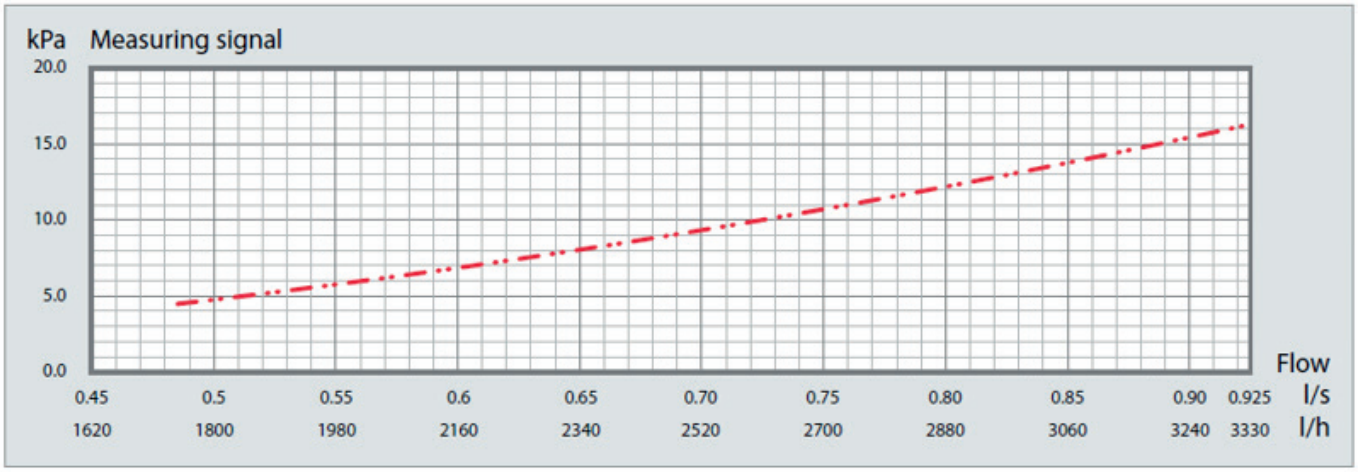
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

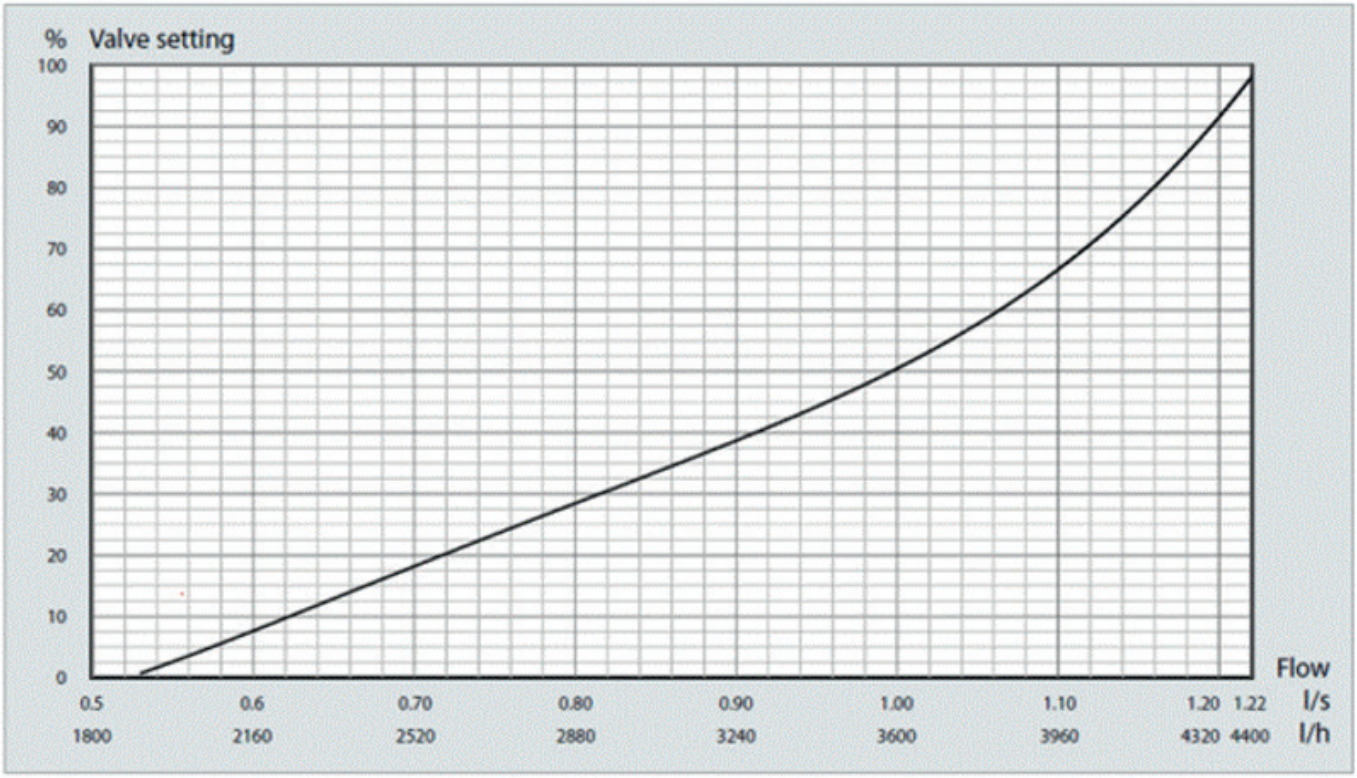
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN32 H

**Black line**

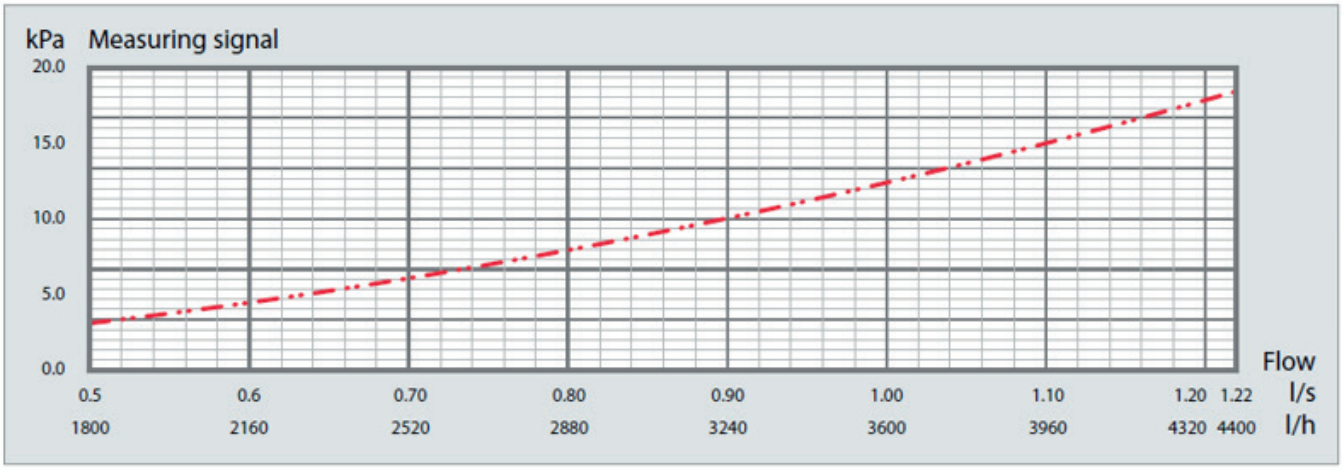
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

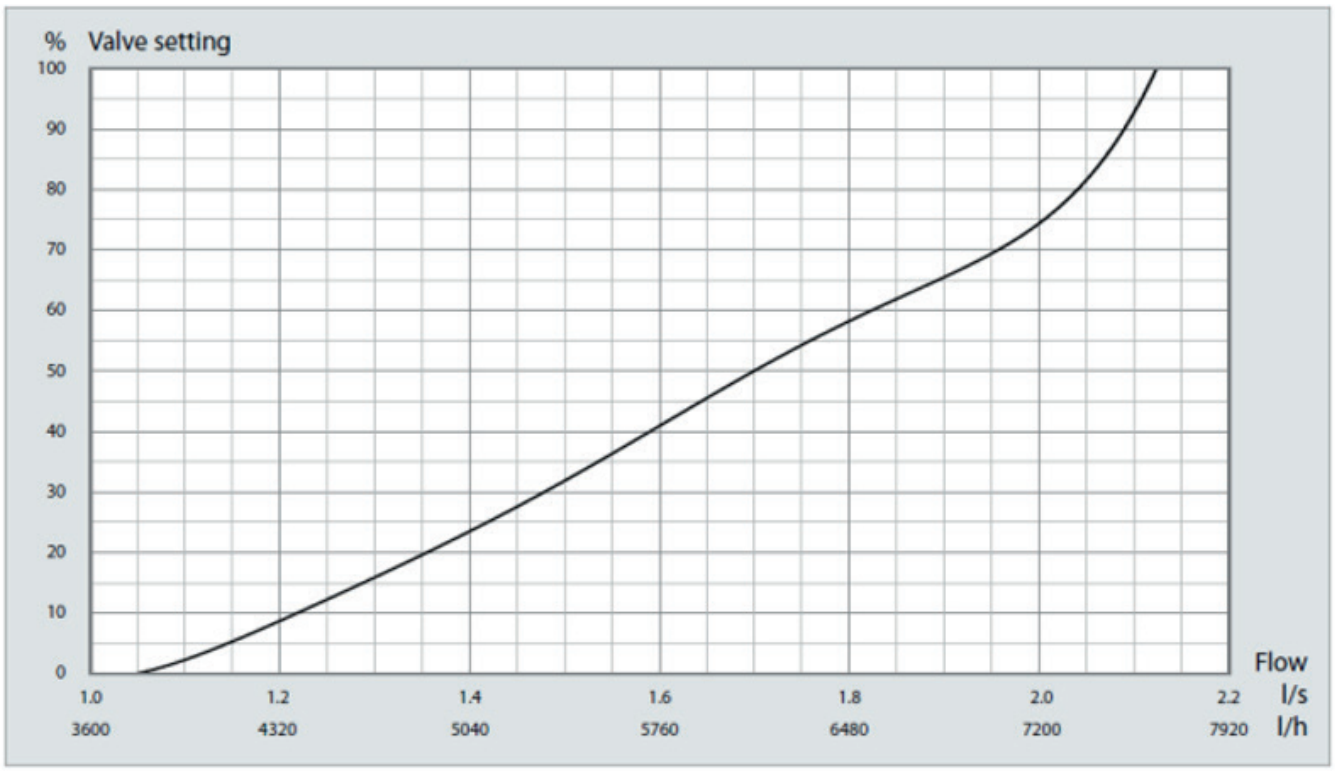
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN40 S

**Black line**

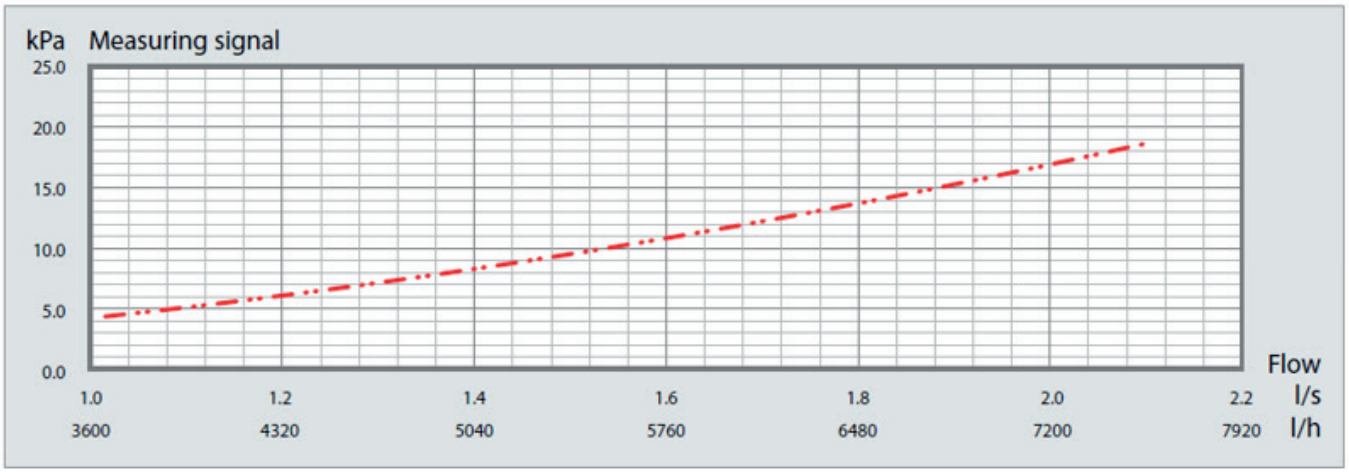
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

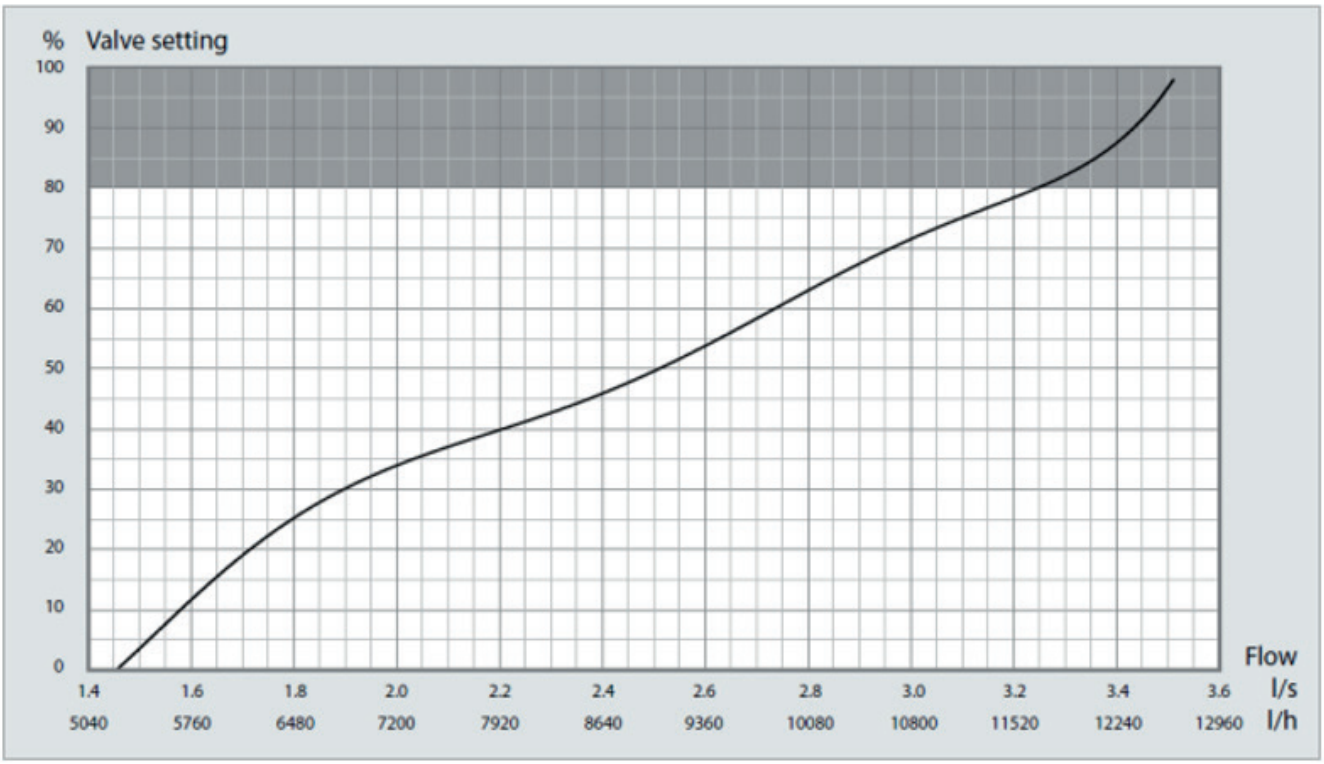
The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning.




## DN50 H

**Black line**

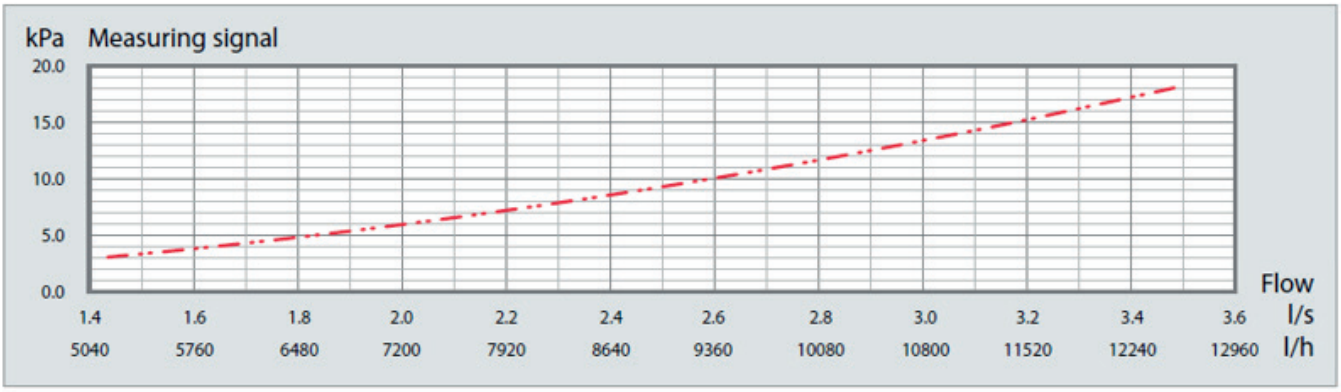
The black line in the below graph specifies the COMAP PICV setting at a given flow. This flow is kept constant at a differential pressure range between 30-400 kPa across the COMAP PICV.




The fixed Kvm value of the built-in Venturi nozzle in the COMAP PICV valve is used for direct flow verification. By connecting a flowmeter to the measuring points of the COMAP PICV and entering the Kvm value into the flowmeter, the actual flow through the COMAP PICV is shown on the flowmeter display. The pre-setting tool is then rotated until the required flow is reached.

A high measuring accuracy is achieved across the entire setting range, but a setting below 14% is not recommended. At a setting below 14% the pressure loss across the Venturi orifice will be below 3.0 kPa which is the minimum requirement for a ±3% flow measuring tolerance accuracy.

The red dotted line graph represents the measuring signal of a COMAP PICV valve at a given flow. This graph is used during system commissioning .



L/s

| Model | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Code | Mini | Maxi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN15L** | 0,010 | 0,014 | 0,019 | 0,024 | 0,027 | 0,029 | 0,030 | 0,031 | 0,032 | 0,033 | 4360000L-000001 | 0,010 | 0,033 |
| **DN15S** | 0,048 | 0,081 | 0,096 | 0,105 | 0,111 | 0,115 | 0,118 | 0,121 | 0,123 | 0,125 | 4360000S-000001 | 0,048 | 0,125 |
| **DN15H** | 0,140 | 0,145 | 0,197 | 0,240 | 0,272 | 0,335 | 0,365 | 0,390 | 0,410 | 0,420 | 4360000H-000001 | 0,140 | 0,420 |
| **DN20S** | 0,102 | 0,114 | 0,128 | 0,146 | 0,164 | 0,182 | 0,198 | 0,218 | 0,236 | 0,245 | 4460000S-000001 | 0,102 | 0,245 |
| **DN20H** | 0,275 | 0,320 | 0,357 | 0,392 | 0,430 | 0,478 | 0,520 | 0,565 | 0,600 | 0,617 | 4460000H-000001 | 0,275 | 0,617 |
| **DN25S** | 0,290 | 0,330 | 0,370 | 0,410 | 0,448 | 0,485 | 0,528 | 0,585 | 0,628 | 0,650 | 4560000S-000001 | 0,290 | 0,650 |
| **DN25H** | 0,525 | 0,570 | 0,615 | 0,660 | 0,707 | 0,750 | 0,795 | 0,850 | 0,896 | 0,925 | 4560000H-000001 | 0,525 | 0,925 |
| **DN32H** | 0,620 | 0,710 | 0,810 | 0,910 | 1,000 | 1,060 | 1,118 | 1,120 | 1,190 | 1,220 | 4660000H-000001 | 0,620 | 1,220 |
| **DN40S** | 1,220 | 1,350 | 1,475 | 1,585 | 1,700 | 1,825 | 1,980 | 2,020 | 2,080 | 2,125 | 4760000S-000001 | 1,220 | 2,125 |
| **DN50H** | 1,575 | 1,525 | 1,900 | 2,200 | 2,500 | 2,725 | 2,950 | 3,225 | 3,430 | 3,525 | 4860000H-000001 | 1,575 | 3,525 |

**m3/h**

| Modèle | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Code | Mini | Maxi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN15L** | 0,036 | 0,049 | 0,067 | 0,085 | 0,097 | 0,103 | 0,108 | 0,112 | 0,115 | 0,119 | 4360000L-000001 | 0,036 | 0,119 |
| **DN15S** | 0,173 | 0,292 | 0,346 | 0,378 | 0,400 | 0,414 | 0,425 | 0,436 | 0,443 | 0,450 | 4360000S-000001 | 0,173 | 0,450 |
| **DN15H** | 0,504 | 0,522 | 0,709 | 0,864 | 0,979 | 1,206 | 1,314 | 1,404 | 1,476 | 1,512 | 4360000H-000001 | 0,504 | 1,512 |
| **DN20S** | 0,367 | 0,410 | 0,461 | 0,526 | 0,590 | 0,655 | 0,713 | 0,785 | 0,850 | 0,882 | 4460000S-000001 | 0,367 | 0,882 |
| **DN20H** | 0,990 | 1,152 | 1,285 | 1,411 | 1,548 | 1,721 | 1,872 | 2,034 | 2,160 | 2,221 | 4460000H-000001 | 0,990 | 2,221 |
| **DN25S** | 1,044 | 1,188 | 1,332 | 1,476 | 1,613 | 1,746 | 1,901 | 2,106 | 2,261 | 2,340 | 4560000S-000001 | 1,044 | 2,340 |
| **DN25H** | 1,890 | 2,052 | 2,214 | 2,376 | 2,545 | 2,700 | 2,862 | 3,060 | 3,226 | 3,330 | 4560000H-000001 | 1,890 | 3,330 |
| **DN32H** | 2,232 | 2,556 | 2,916 | 3,276 | 3,600 | 3,816 | 4,025 | 4,032 | 4,284 | 4,392 | 4660000H-000001 | 2,232 | 4,392 |
| **DN40S** | 4,392 | 4,860 | 5,310 | 5,706 | 6,120 | 6,570 | 7,128 | 7,272 | 7,488 | 7,650 | 4760000S-000001 | 4,392 | 7,650 |
| **DN50H** | 5,670 | 5,490 | 6,840 | 7,920 | 9,000 | 9,810 | 10,620 | 11,610 | 12,348 | 12,690 | 4860000H-000001 | 5,670 | 12,690 |

## Flow setting

Before setting the design flow on the COMAP PICV, the pump must be set at maximum capacity and all service valves in the system must be in fully open position. The differential pressure across the COMAP PICV must at all times not exceed 400 kPa.

The design flow is easily adjusted with the enclosed pre-setting tool. After connecting the Balancing Computer B, or any other flowmeter, to the COMAP PICV, the flow reading is provided for precise flow tuning.

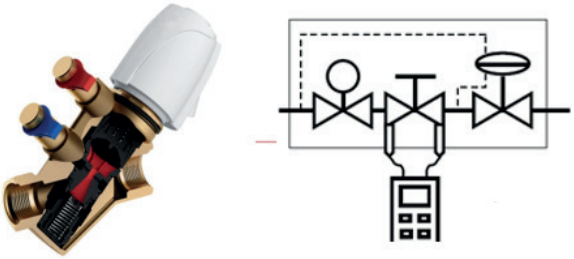
The pre-setting tool is mounted on top of the valve covering the valve stem. The scale on the pre-setting tool is read against the marking on the brass housing of the valve.

COMAP PICV with pre-setting tool mounted.

The flow is set by turning the pre-setting tool from 0-90°. Each marking on the scale indicates a step of 10%. When the required flow is set and the starting differential pressure is provided, the flow is kept constant by the COMAP PICV valve.

COMAP PICV at:
A - 100% pre-set flow
B - 50% pre-set flow

A unique feature of the COMAP PICV valve is the integrated Venturi nozzle which enables direct flow measurement. This provides an exact flow setting of the valve and makes verification of the actual flow rate possible at any time for correct documentation. System troubleshooting thereby also becomes considerably easier which saves time.



Flow measured across the Venturi nozzle integratedin the COMAP PICV valve

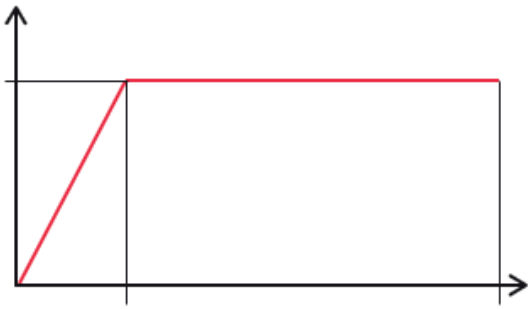
To verify the flow a flowmeter is connected to the measuring points of the COMAP PICV. The fixed Kvm value of the integrated Venturi nozzle is then typed into the flowmeter to directly display the actual flow at an accuracy tolerance of ±3%. When the required flow is set, the balance in the system is provided. The flow is kept constant by the COMAP PICV valve regardless of pressure fluctuations.


Flow verification across the COMAP PICV valve during system commissioning.

## COMAP PICV flow control accuracy

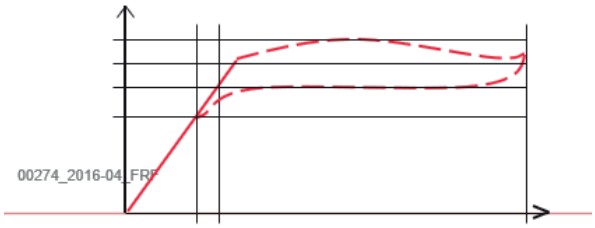
When set to a given flow, all valves based on the principle of dynamic balancing have a certain inaccuracy. Within the valve operating pressure range the real flow can deviate from the set design flow. In practise this means that the actual flow through the valve differs from what it was set to be because of pressure fluctuation in the system. This typically occurs from hysteresis and the desire to have a low starting pressure which is required for the differential pressure regulator in the valve to stabilize the flow.
The starting pressure of the index valve contributes to the total system pressure loss and therefore influences the pump dimensioning.

The built-in differential pressure regulator stabilizes the flow across the COMAP PICV when the pressure loss across the valve is within 30 kPa to 400 kPa. When the pressure loss decreases below 30 kPa, the COMAP PICV operates with lower accuracy and at much lower differential pressure it enters into a static balancing zone.



The regulator ensuring constant differential pressure across the flow pre-setting unit and the two-way valve unit requires a pressure loss of minimum 30 kPa and maximum 400 kPa across the complete valve to operate properly. Within this pressure loss range the valve will maintain a constant flow (Qsized).

The required starting differential pressure of 30 kPa across the COMAP PICV ensures a high flow control accuracy of at least ±7%. The differential pressure working range is defined in the below graph: from PminA to Pmax. The flow tolerance, the same as the deviation from the Qsized, is within Qa - Qb (±7%).



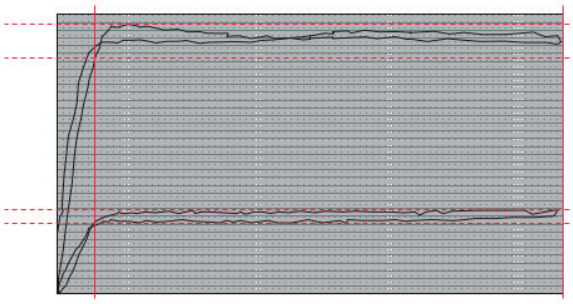

The COMAP PICV minimum operating differential pressure In

Common for pressure independent control valves is that a decrease in the differential pressure affects the accuracy of the valve.

The starting differential pressure specified for the COMAP PICV has for the above reason been carefully selected as 30 kPa. Decreasing this value from PminA to Pmin1 would result in a desirable lower pump head, but the flow control accuracy would deteriorate accordingly: Qa-Qb < Qa-Q1.
The high flow control accuracy will therefore achieve a better system energy efficiency compared to a pressure independent flow control valve with a low starting differential pressure.

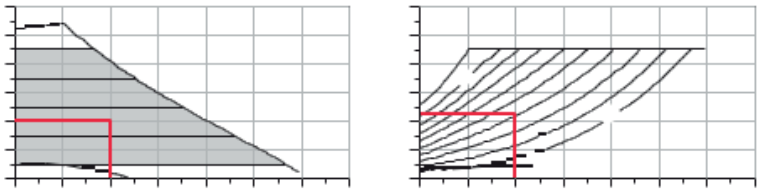
## COMAP PICV energy efficiency example

The below flow graph for the COMAP PICV DN 15L indicates that the accuracy in the high flow end is within ±5.8% at a starting differential pressure of 30 kPa.



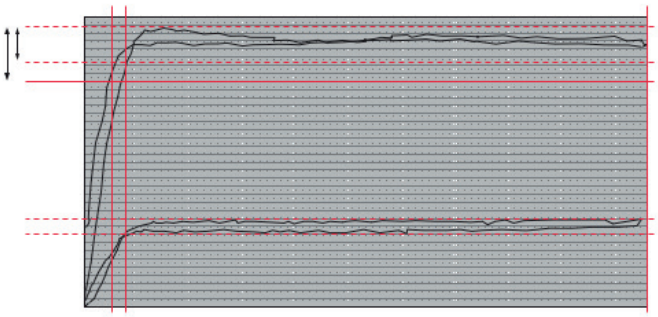
COMAP PICV DN 15L flow control accuracy at different valve settings

In this example a COMAP PICV DN 15L valve is installed in a heating system consisting of 35 terminal units. The supply and return water temperature difference is 20°C, the total required flow is 4.0 m3/h and the required pump head is 40 kPa, of which 30 kPa is required for the COMAP PICV DN 15L valve. The total system capacity is
93.3 kW and the pump requires 90 W power supply.



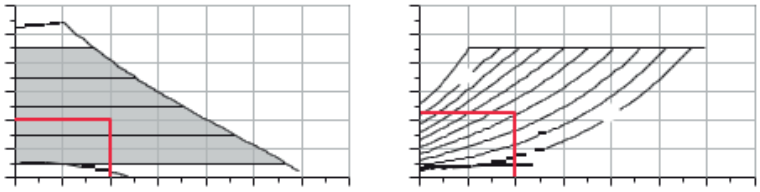
The COMAP PICV valve operates at a starting differential pressure of 30 kPa. The pump power equals 90 W.

If the starting differential pressure is decreased by 10 kPa to 20 kPa the flow control accuracy will at the same time decrease to around ±11%.



COMAP PICV DN 15L flow control accuracy at a starting differential pressure of 20 kPa.

The decreased flow control accuracy can cause the total flow in the system to increase by 11.0% - 5.8% = 5.2% equal to approximately 0.2 m3/h more flow and a 4.7 kW higher energy consumption. The result is that the maximum overflow in this example may cause a much higher energy consumption than applying a pump with 10kPa higher head.



A pressure independent flow control valve at 20 kPa differential starting pressure.

In this example the energy gain using a pump with lower pump head is 90 W - 75 W = 15 W.
Compared to the accuracy loss caused by a possible overflow, the pump energy reduction is negligible. This shows that a simple pump head decrease due to a lower starting differential pressure requirement is not a key factor and cannot be used as an argument for supporting improved energy efficiency only.

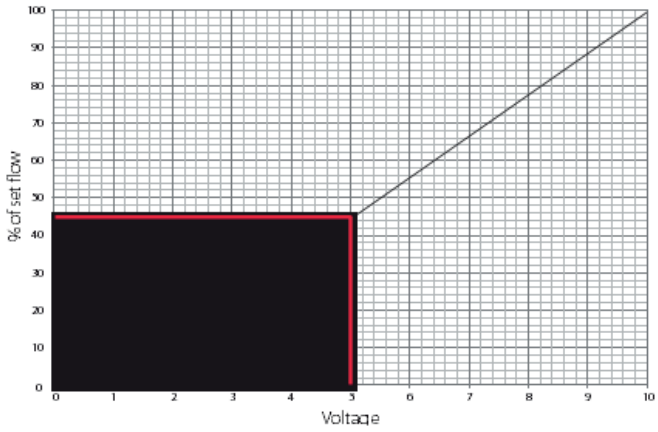
The basis of the COMAP PICV valve design is to provide a high flow control accuracy for improved energy efficiency. For this reason the whole COMAP PICV range has been designed for a starting differential pressure of 30 kPa, instead of only 20 kPa which would compromise the valve performance.

The high flow control accuracy will compensate for the increased differential pressure requirement. Overflows are eliminated and improved system energy efficiency provided.

## COMAP PICV Actuators

Two types of actuators are available for the COMAP PICV valves:
Thermoelectric on/off 230/24 V and modulating 0-10 V actuators for sizes DN 15 - 32
Electromechanical on/off 230/24 V and modulating 0-10 V actuators for sizes DN 40 - 50

The diagram shows the typical modulating characteristics of COMAP PICV. The data is based on the properties of a COMAP PICV DN 50H.
The diagram shows how much flow is allowed through the valve at the different control voltages



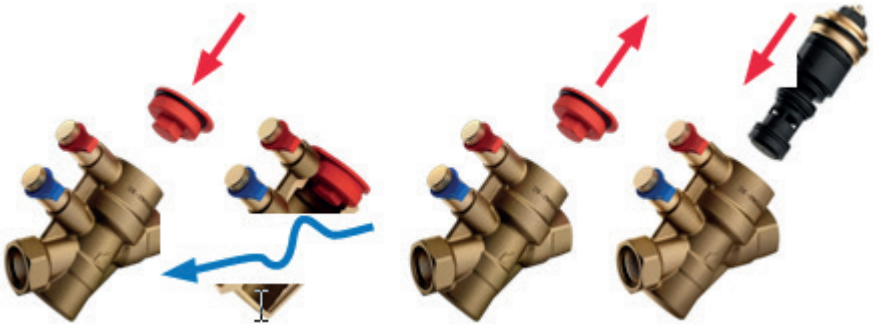

A COMAP PICV DN 50H
is set to provide a flow rate of
10000 l/h. To find the flow at an actuator position of 5 V, the graph shows that 45% of the pre-set flow will pass through the valve:
10000 l/h x 45% = 4500 l/h.

The DN 50H valve with the actuator is in initially closed position at 0 V. The higher the voltage the more open the valve is.

The characteristic is linear.

## COMAP PICV system flushing

It is recommended to flush the system after the installation of COMAP PICV valves. This is done by removing the COMAP PICV cartridge and replacing it with the red pre-setting cap to seal off the valve when flushing is carried out. It is furthermore recommended that strainers are mounted in the system to protect terminal units and valve.



When the system flushing is completed, all filters and strainers have to be cleaned, the pre-setting cap is removed and the cartridge is inserted into the valve housing again and tightened carefully.

## COMAP PICV shut-off cap

A shut-off cap for COMAP PICV DN 15 - 32 is provided to isolate the flow across the valve installed in an operating system. The shut-off cap is mounted on the COMAP PICV valve in the place of the actuator. Hand tightening of the shut-off cap ensures flow isolation.

It is required that the differential pressure across an open as well as a closed COMAP PICV valve may never exceed 400 kPa.

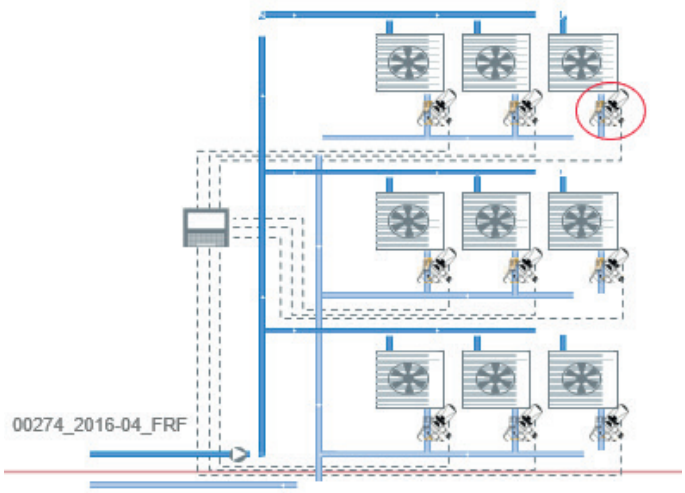
The valve leak class does not ensure 100% tightness, thus using it as a service valve is not recommended.

The shut-off cap is used for flow isolation across the COMAP PICV valve provided that the differential pressure across the closed valve never exceeds 400 kPa.

## COMAP PICV operation

A balancing procedure is not required when using COMAP PICV valves. The valves are simply set to the required flow rate and will compensate for pressure fluctuations in the system. The hydronic balance in the system is thereby ensured.

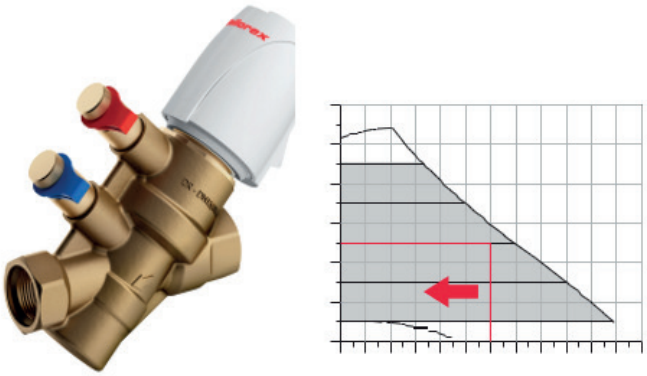
When all valves are set to the required flow rate, the pump head is minimized to avoid unnecessary energy consumption. The pump head is minimized to the optimal point where the pump delivers only as much pressure as the index valve needs to operate correctly.




Indication of the index valve in a system of fan-coils balanced by COMAP DPCV.

The optimal pump setting is easily found in a system with COMAP PICV valves. The pump is set to its maximum capacity during the pre-setting of the COMAP PICV valves. After the setting of all valves is completed, a flow meter is connected to the index valve, which is the system valve with the least differential pressure available. Typically this would be the most remote valve from the pump.

The pump head is then reduced until the flow on the index valve starts to decrease dramatically. This point is the minimum pressure required. To be sure that sufficient pressure is available, the pump head is slightly increased again until the design flow rate of the index valve is displayed in the flowmeter again. Hydronic balance is established and the pump head kept at a minimum.

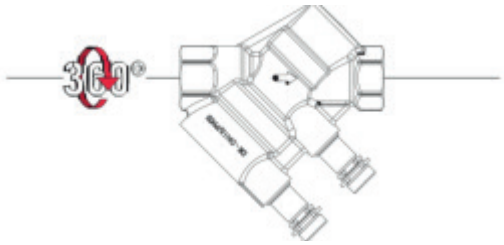
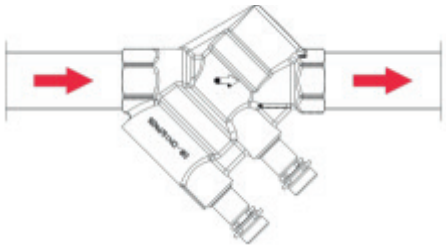
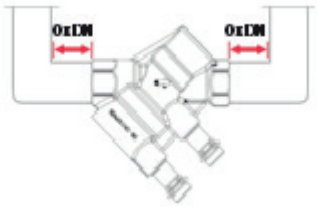
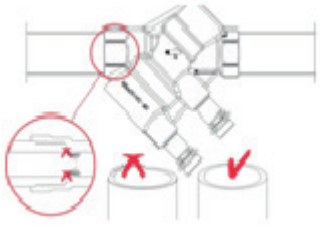
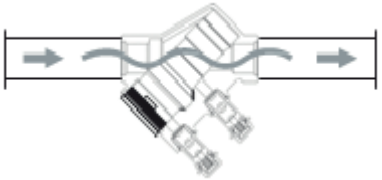
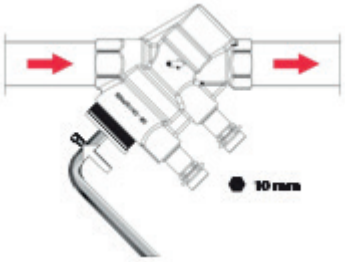


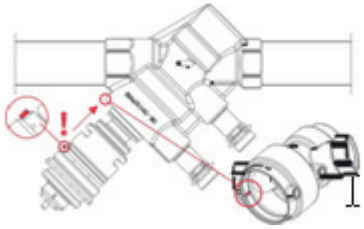
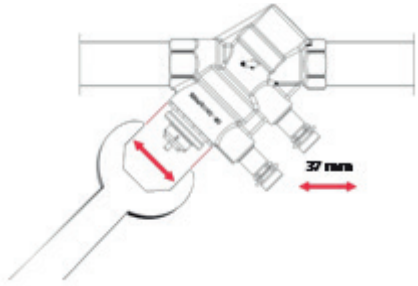
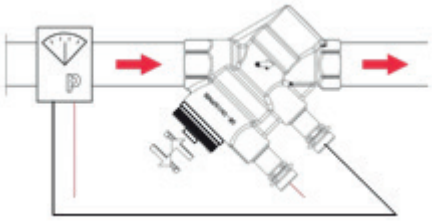
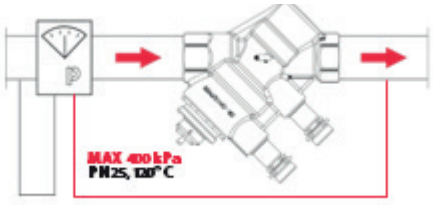
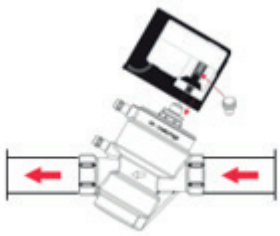
Variable speed pumps installed in a system of COMAP PICV valves operated in constant pressure mode.
When flow decreases below the design value the differential pressure still remains on the same level ensuring the required conditions for COMAP PICV valves to operate with 100%.

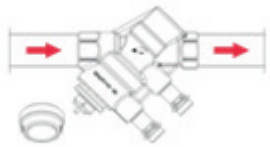
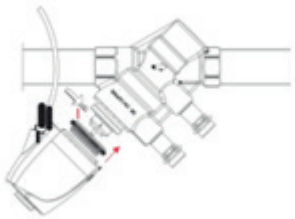
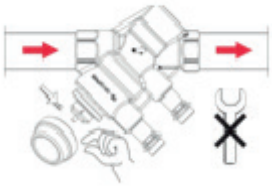
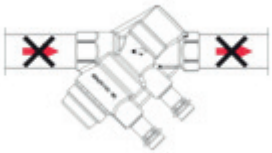
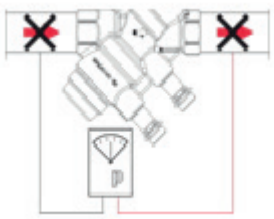
When using a variable speed pump it is recommended to operate it in a constant differential pressure mode. This will ensure that the flow will be adjusted according to the current load demand and that the constant pressure level will provide the required condition for the differential pressure regulator inside the COMAP PICV valves to operate correctly.

## Installation

### Mounting instructions DN 15 – 50

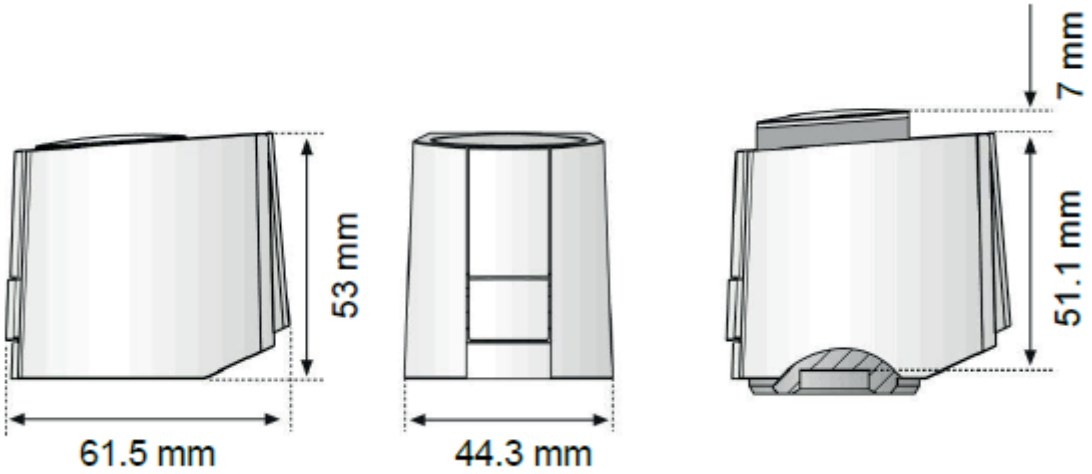
| | |
|---|---|
|  | The arrow on the COMAP PICV housing indicates the flow direction to be respected. |
|  | The COMAP PICV can be orientated 360° around the pipe axis. |
|  | No straight piping is required the COMAP PICV can be mounted directly onto bends and flexible pipes, etc. |
|  | Deburring of pipe ends is to be performed to avoid system clogging. A loose hem pis not to hang into the pipe. |
|  | System flushing should be carried out before the cartridge is installed in the COMAP PICV housing.<br><br>To enable flushing the valve is sealed with the pre-setting cap.<br><br>Maximum pressure during system flushing is 16 bar and the maximum temperature allowed is 25°C. |
|  | When the system flushing is completed, the pre-setting cap is removed from the valve housing using a 10mm Allen key. |

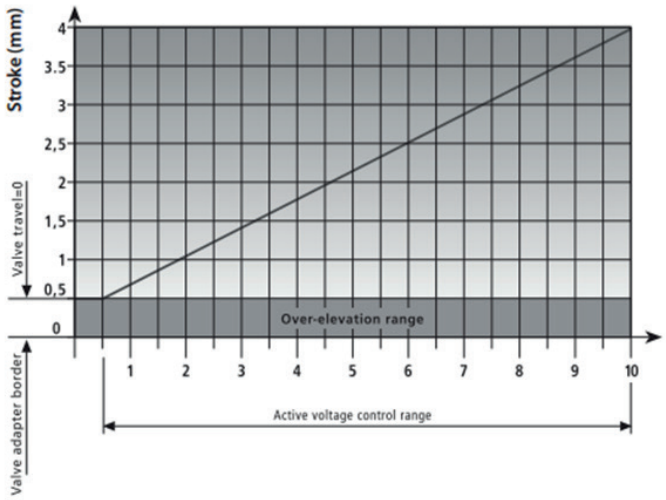
| | |
|---|---|
|  | A cartridge sized for the design flow is mounted in the COMAP PICV housing.<br>Note!<br>The cartridge steering pin must slide into the valve housing groove. |
|  | The cartridge is tightened carefully using a 37 mm key.<br>Note : No tool should be used on the small nut on the top of the cartridge. |
|  | A rough pre-setting of the flow is done using the pre- setting cap with a setting scale of 0-100% of the cartridge flow range.<br>For a precise flow setting the Balancing Computer is connected to the COMAP PICV. The pre-setting cap is then used to change the cartridge setting until the desired flow is displayed on the balancing computer. |
|  | Maximum differential pressure allowed across the COMAP PICV is 400 kPa and the maximum allowed temperature is 120°C. |
|  | When using COMAP PICV DN 40 - 50 as a control valve, an actuator must be mounted. The provided adaptor is slid onto the actuator spindle and the COMAP actuator is then screwed onto COMAP PICV. |
|  | Both the COMAP PICV valves DN 40 - 50 and the COMAP actuator can be mounted in any position except for the COMAP actuator positioned underneath the COMAP PICV valve. |

| | |
|---|---|
|  | To isolated the system flow a shut-off cap is mounted onto the COMAP PICV DN 15 - 32 valves. |
|  | When using COMAP PICV sizes DN 15 - 32 as a control valve, an actuator must be mounted.<br>A connection ring is mounted onto the valve housing and the COMAP actuator is then clicked on |
|  | Both the COMAP PICV valves DN 15 - 32 and the actuator can be installed in any position required. |
|  | The shut-off cap is tightened by hand only. Tools are not allowed for this purpose. |
|  | After tightening the shut-off cap, flow across the COMAP PICV valve will be blocked. |
|  | Maximum differential pressure across the COMAP PICV valve must not exceed 400 kPa. |

| Figure | Illustration | Description | | | | | Code |
|---|---|---|---|---|---|---|---|
| | | Size | NO / NF | Technology | V | Control | |
| ACTU ON/OFF |  | M30x1.5 | NF (normally closed) | Electro-thermal | 24V | ON/OFF | C430015001 |
| |  | M30x1.5 | NF (normally closed) | Electro-thermal | 230V | ON/OFF | C430014001 |
| ACTU MOD |  | M30x1.5 | NF (normally closed) | Thermo-electronic | 24V | 0 - 10V | U620007001 |
| Ballancing Access | | | Setting tools | | | | U620008001 |

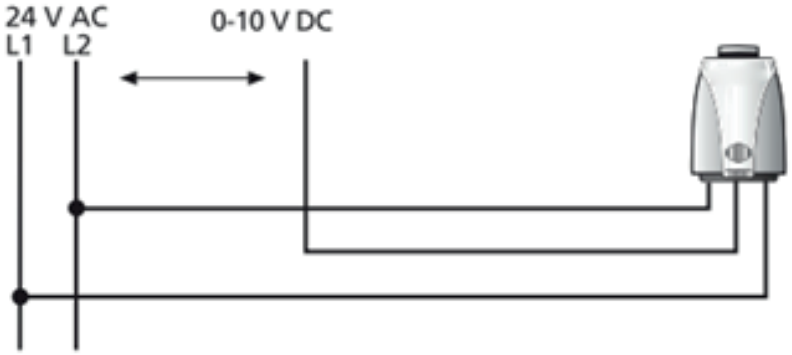
## Proportional actuators - 24V





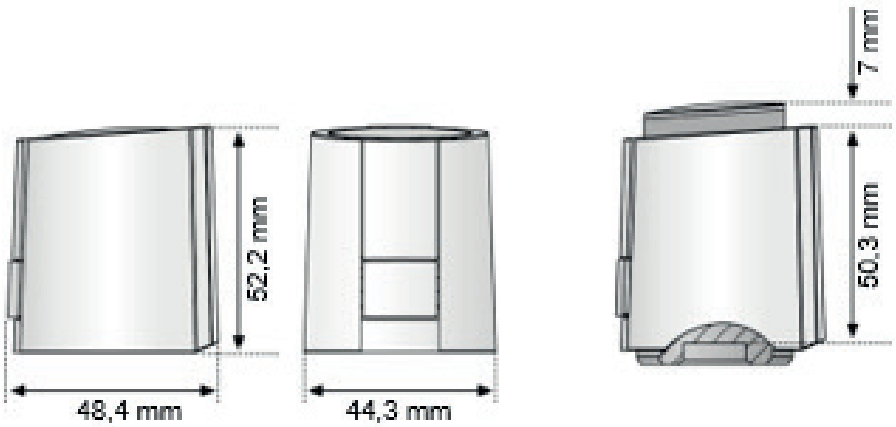

Stroke in reference to the 0-10 V control signal.

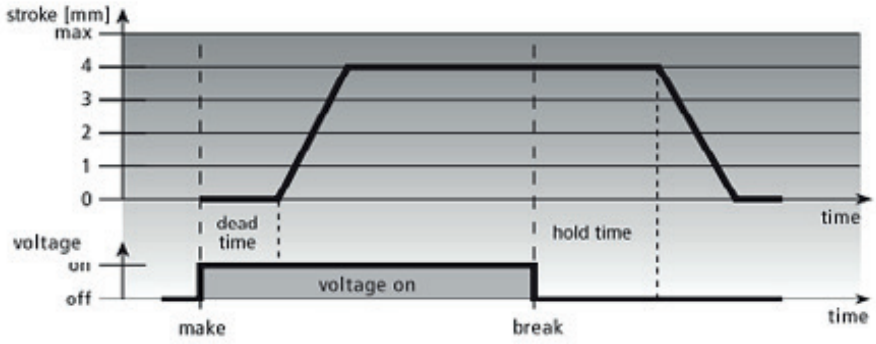
The COMAP PICV actuator normally remains closed. The valve is opened once by 0.5 mm and then closes again after applying the operating voltage of 24 V AC. This is done as a first-open function to unlock and to find the closing point of the valve. This ensures an optimum match with the valve.



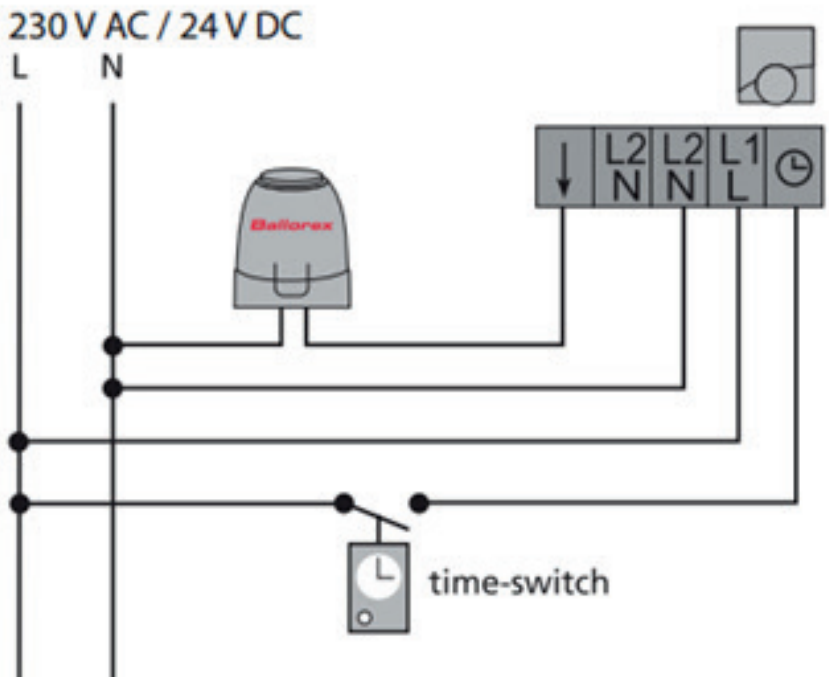

Connection of the actuator.

## Actuators ON/OFF - 230V or 24V






Operation of the actuator.




Operation of the actuator.