



# IVR 319

Valvola di controllo indipendente dalla pressione (PICV) in ghisa Flangiata PN16 secondo EN1092-2 (ex DIN2533)

**Con gruppo di regolazione per  $\Delta P$  fino a 400kPa**

Tolleranza sulla portata nominale regolata  $\pm 15\%$

Con attuatore modulante 0-10VDC, alimentazione 50Hz/60Hz 24V AC/DC (IP54, 3,5W, manovra 90° in 150 secondi, temp. ambiente da -30 a 50°C)

PN16 (Max 16bar fino a 90°C, max 13bar a 110°C)

Esente marcatura CE (cat. secondo Art. 4.3 Dir. 2014/68/UE)

Condizioni di esercizio

- Idoneo per: acqua, da -10°C a +110°C  
sotto 0°C solo per acqua additivata con antigelo  
oltre i 100°C solo con additivi che prevengano l'ebollizione  
(utilizzabili miscele di glicol-etilenico o glicol-propilenico fino al 50%)
- Non idoneo per: gas gruppo 1 e 2, liquidi gruppo 1 (Dir. 2014/68/UE)



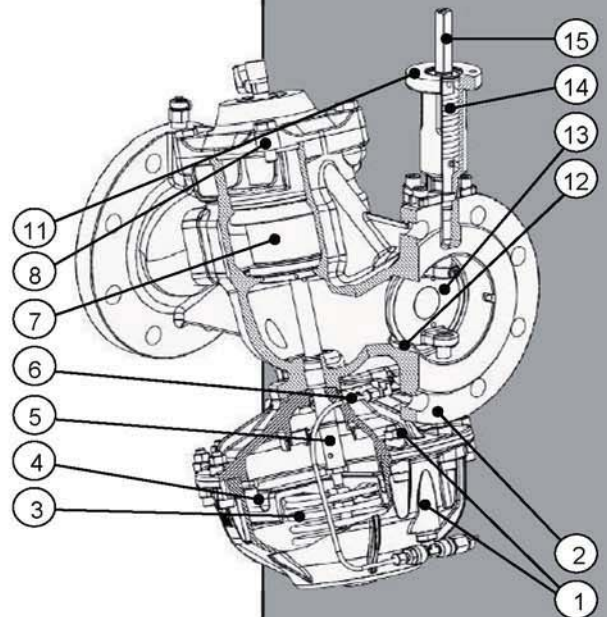
## PARTLIST

N.	Componente	Materiale	Norma
1	Sede molla	Alluminio	-
2	Corpo	Ghisa	EN-GJL-250
3	Molle gruppo reg.	Acciaio inox	AISI 302
4	Membrana	EPDM	-
5	Steli gruppo reg.	Ottone <sup>1</sup>	EN12164 CW617N
6	Tubi	Rame	-
7	Otturatore	Alluminio / ottone <sup>1</sup>	-
8	Cappello	Ghisa	EN-GJL-250
9	O-ring e tenute	EPDM	-
10	Raccorderia	Ottone <sup>2</sup>	-
11	Supporto attuato.	Alluminio	-
12	Sede otturatore	Acciaio inox	AISI 304
13	Otturatore	Ottone	EN12164 CW617N
14	Molla antitorsione	Acciaio per molle	2FD
15	Steli otturatore	Ottone	EN12164 CW617N
16	Bulloneria	Acciaio inox	A2

<sup>1</sup>Boccole antifrizione in R-PTFE, tenuta otturatore in EPDM

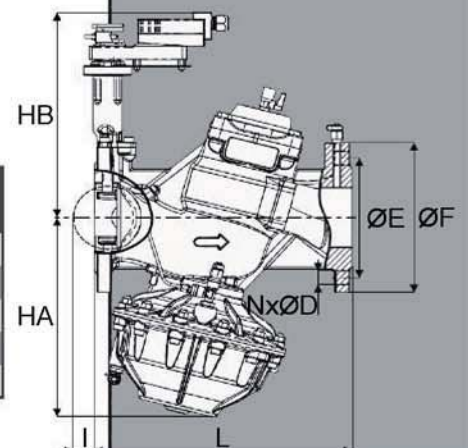
<sup>2</sup>Prese pressione con guarn. in EPDM e cravatte in polipropilene, raccorderia nichelata

<sup>3</sup>Con anelli antifrizione in PTFE e bussole in acciaio inox rivestito PTFE



## DIMENSIONI

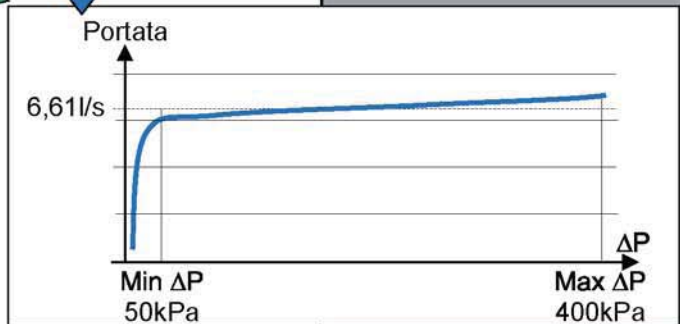
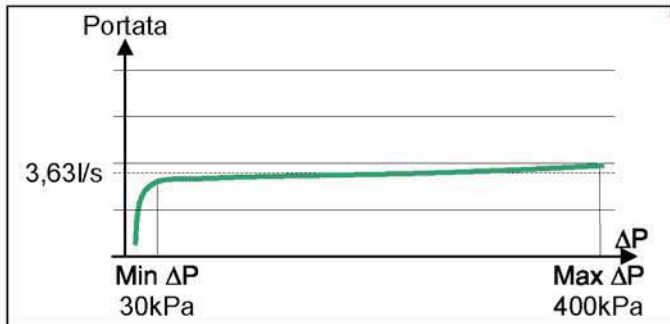
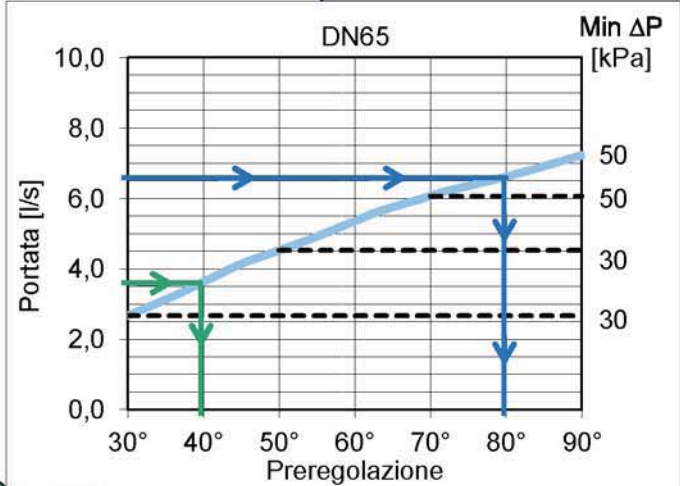
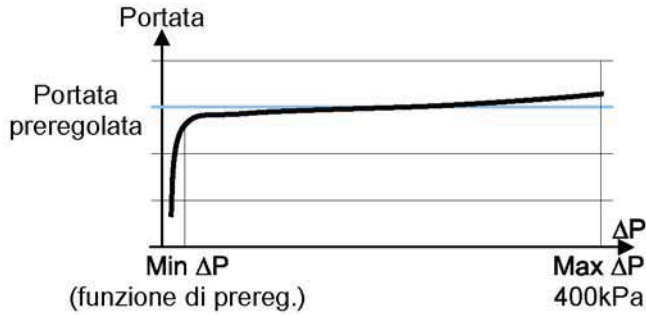
DN	ØF [mm]	ØE [mm]	NxØD [mm]	HA [mm]	HB [mm]	L [mm]	I [mm]	Portate [l/s]	Peso [kg]
065	185	145	4x18	217	289	290	18	2,67-7,22	23,3
080	200	160	8x18	281	298	310	23	3,52-10,0	29,8
100	220	180	8x18	295	308	350	36	7,14-22,9	35,3
125	250	210	8x18	317	356	400	47	9,88-34,7	48,1
150	285	240	8x22	341	385	480	68	14,2-44,4	77,1



# PREREGOLAZIONE

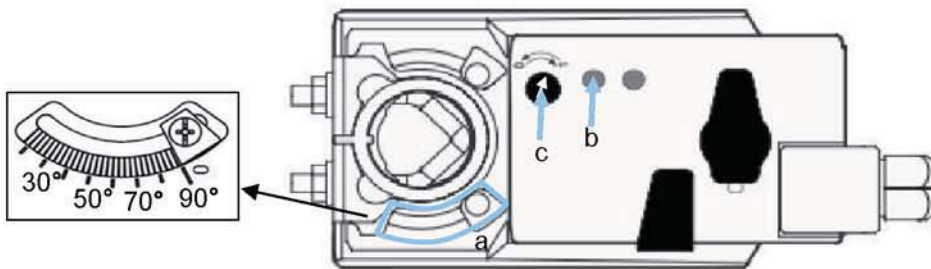
La prerogolazione permette di impostare la portata massima della valvola, ovvero la portata che verrà mantenuta costante entro il range di pressione differenziale di utilizzo (secondo i principi del bilanciamento dinamico) a valvola completamente aperta.

La prerogolazione influisce sulla pressione differenziale minima di utilizzo della valvola.



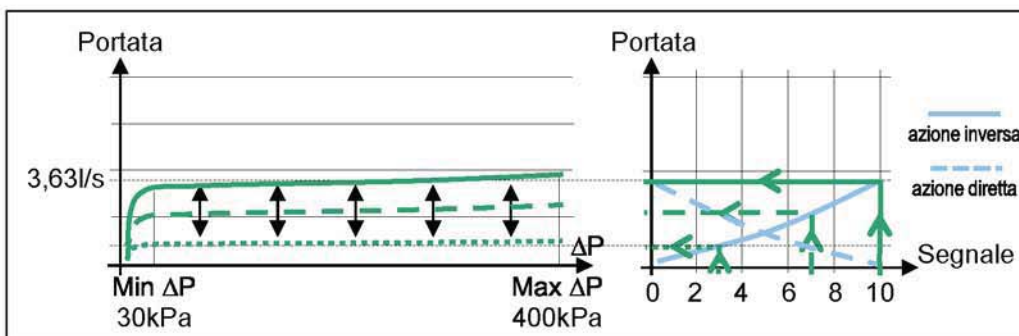
E' possibile impostare la prerogolazione della valvola agendo sul fermo meccanico dell'attuatore elettrico:

- con un cacciavite spostare il fermo facendo riferimento alla scala graduata; la corrispondenza tra posizioni di prerogolazione e portata regolata può essere ricavata dai grafici nella pagina seguente;
- avviare il rilevamento della corsa premendo il pulsante "Adaption".

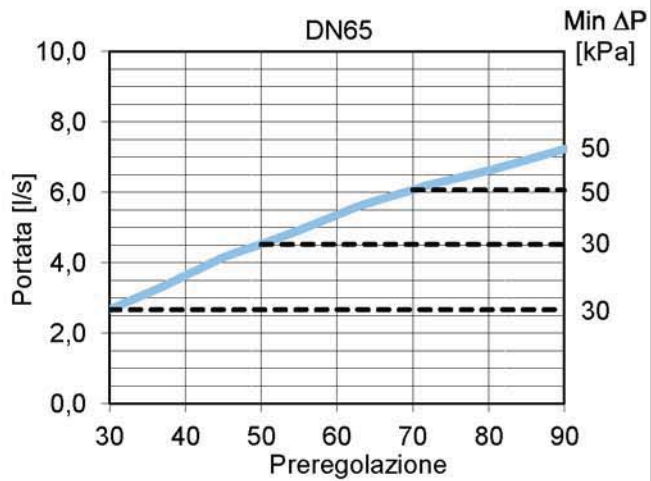


Al termine del rilevamento la nuova posizione massima viene associata al segnale di apertura, viene quindi ridistribuita in maniera proporzionale la corrispondenza tra segnale 0-10V e posizione di apertura della valvola.

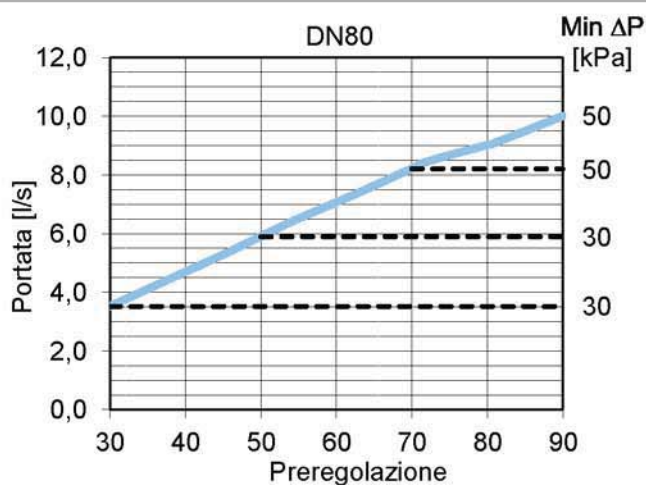
Agendo sull'apposito selettore (c) é possibile impostare l'attuatore su "azione inversa" (freccia su 1 come da impostazioni di fabbrica, chiude con segnale 0V) o "azione diretta" (freccia su 0, apre con segnale 0V).



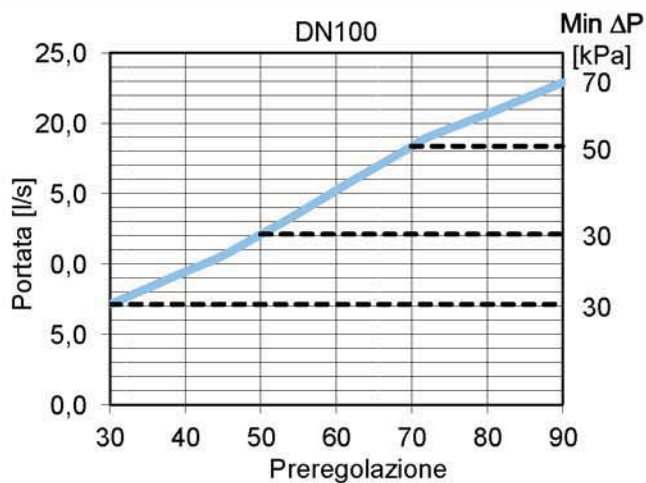




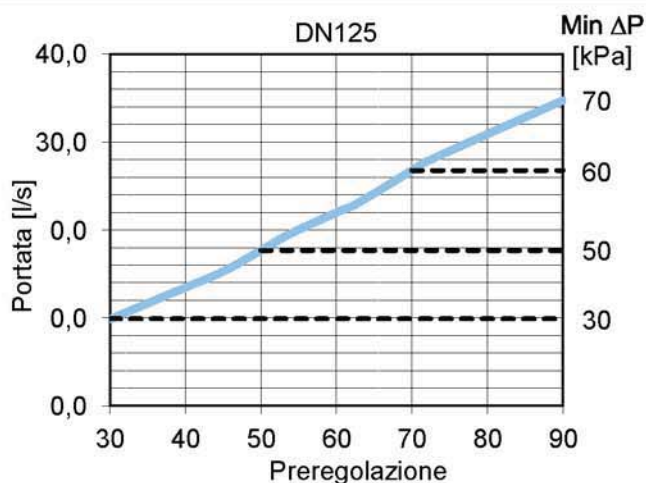
DN65	Portata		ΔP min.
Prereq.	[l/s]	[m <sup>3</sup> /h]	[kPa]
30°	2,67	9,60	30
40°	3,63	13,1	30
50°	4,52	16,3	30
60°	5,35	19,3	50
70°	6,06	21,8	50
80°	6,61	23,8	50
90°	7,22	26,0	50



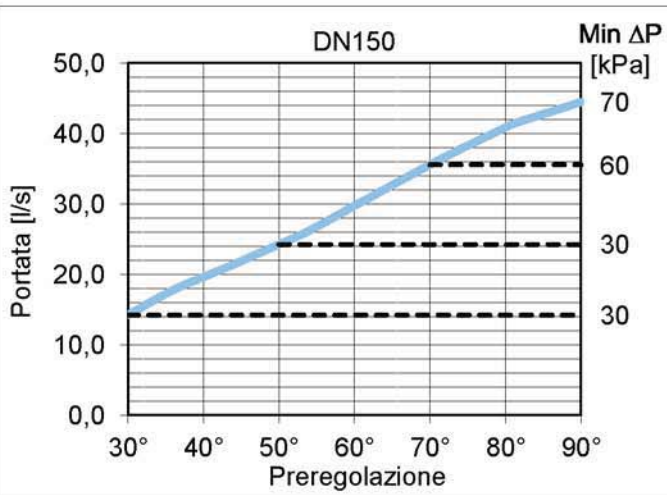
DN80	Portata		ΔP min.
Prereq.	[l/s]	[m <sup>3</sup> /h]	[kPa]
30°	3,52	12,7	30
40°	4,69	16,9	30
50°	5,90	21,2	30
60°	7,06	25,4	30
70°	8,21	29,6	50
80°	9,01	32,4	50
90°	10,0	36,0	50



DN100	Portata		ΔP min.
Prereq.	[l/s]	[m <sup>3</sup> /h]	[kPa]
30°	7,14	25,7	30
40°	9,45	34,0	30
50°	12,1	43,6	30
60°	15,2	54,8	50
70°	18,4	66,1	50
80°	20,7	74,4	70
90°	22,9	82,5	70



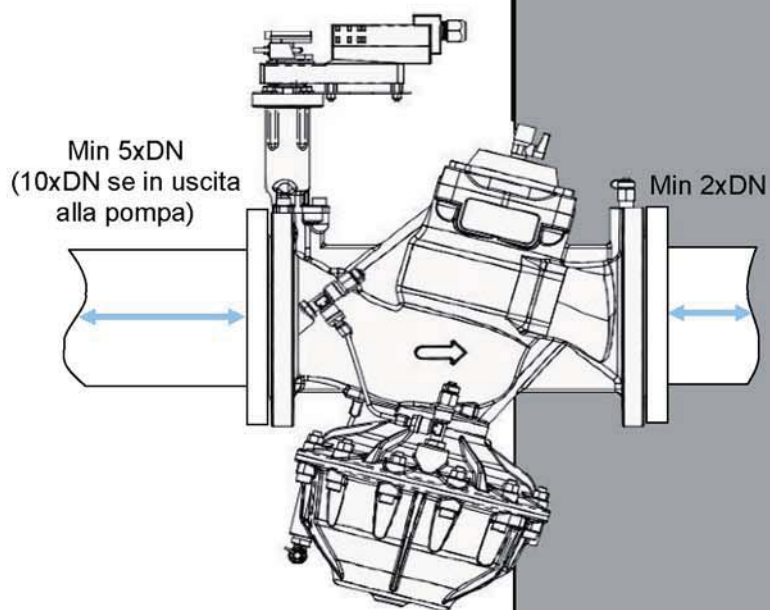
DN125	Portata		ΔP min.
Prereq.	[l/s]	[m <sup>3</sup> /h]	[kPa]
30°	9,88	35,6	30
40°	13,5	48,5	30
50°	17,7	63,7	50
60°	22,0	79,1	50
70°	26,7	96,3	60
80°	30,9	111	70
90°	34,7	125	70



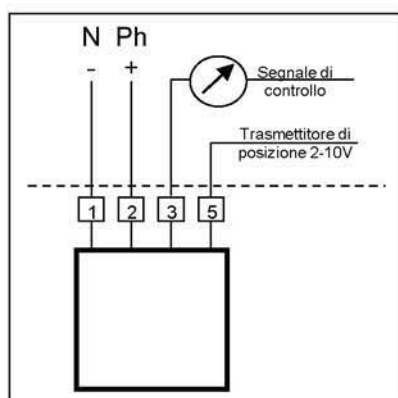
DN150 Prereq.	Portata [l/s]	Portata [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	14,2	51,1	30
40°	19,6	70,4	30
50°	24,2	87,3	30
60°	29,7	107	50
70°	35,5	128	60
80°	40,8	147	70
90°	44,4	160	70

## INSTALLAZIONE

Per ottenere prestazioni ottimali installare la valvola su una tubazione con lo stesso diametro nominale facendola precedere e seguire da un tratto di tubo rettilineo come da indicazioni in figura.



## SCHEMA ELETTRICO



Sigla	Definizione
N	Collegamento a neutro
Ph	Collegamento a fase
+	Collegamento a polo +
-	Collegamento a polo -

**ATTENZIONE:** l'attuatore è in grado di rilevare solo segnali di controllo >0,5V.



# IVR 319

Cast iron pressure independent control valve (PICV)  
 Flanged PN16 according to EN1092-2 (ex DIN2533)  
**With differential pressure regulator for  $\Delta P$  up to 400kPa**  
 Tolerance on nominal regulated flow  $\pm 15\%$   
 With 0-10VDC modulating actuator, power supply 50Hz/60Hz 24V AC/DC  
 (IP54, 3,5W, travel 90° in 150 seconds, ambient temp. -30° to +50°C)

PN16 (Max 16bar up to 90°C, max 13bar at 110°C)  
 Free of CE marking (cat. according to Art. 4.3 Dir. 2014/68/EU)

## Working conditions

- Suitable for: water, -10°C to +110°C  
 below 0°C only for water with added antifreeze fluids  
 over 100°C only for water with added anti-boiling fluids  
 (Ethylene glycol or propylene glycol mixtures up to 50% may be used)
- Not suitable for: gases group 1 & 2, liquids group 1 (Dir. 2014/68/EU)



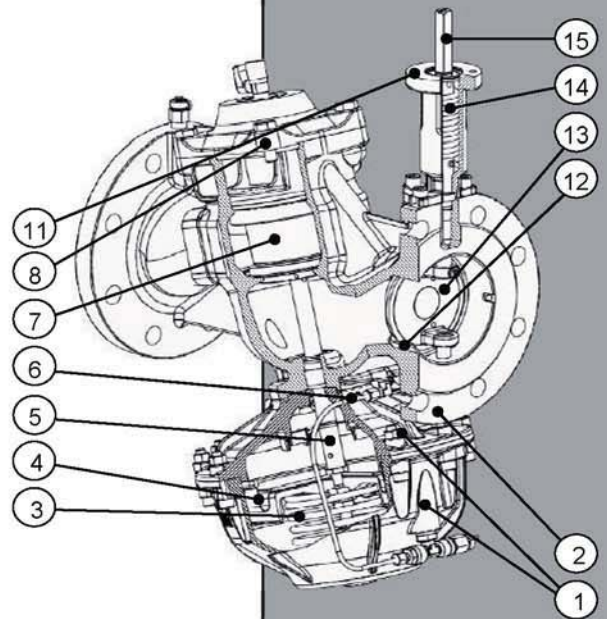
## PARTLIST

N.	Part	Material	Norm
1	Spring housing	Aluminum	-
2	Body	Cast iron	EN-GJL-250
3	Pres. reg. springs	Stainless steel	AISI 302
4	Membrane	EPDM	-
5	Pres. reg. stems	Brass <sup>1</sup>	EN12164 CW617N
6	Pipe	Copper	-
7	Shutter	Aluminum / brass <sup>1</sup>	-
8	Bonnet	Cast iron	EN-GJL-250
9	O-ring and seals	EPDM	-
10	Fittings	Brass <sup>2</sup>	-
11	Actuator Stand	Aluminum	-
12	Shutter seat	Stainless steel	AISI 304
13	Shutter	Brass	EN12164 CW617N
14	Overt. prev. spring	Spring steel	2FD
15	Shutter stem	Brass <sup>3</sup>	EN12164 CW617N
16	Bolts and nuts	Stainless steel	A2

<sup>1</sup>With R-PTFE bushings, EPDM shutter gasket

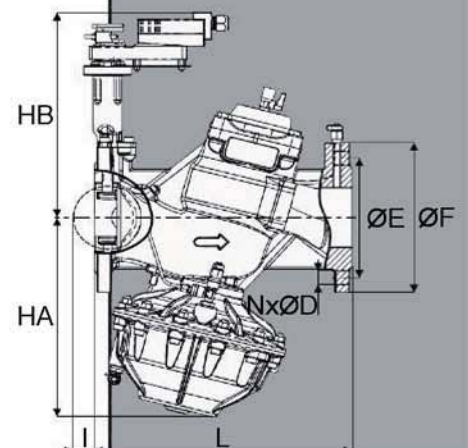
<sup>2</sup>Test points with EPDM Perox gaskets and polypropylene ties, nickel pl. Fittings

<sup>3</sup>With PTFE sliding washer and PTFE coated stainless steel bushings



## DIMENSIONS

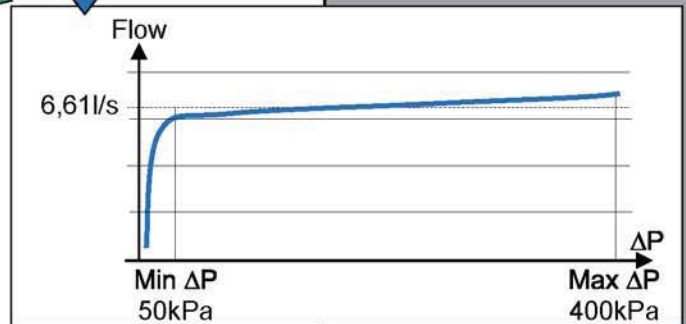
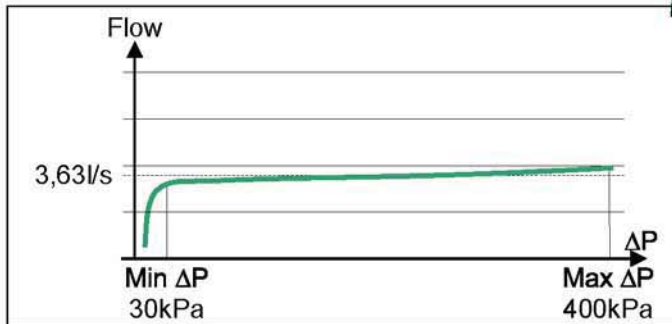
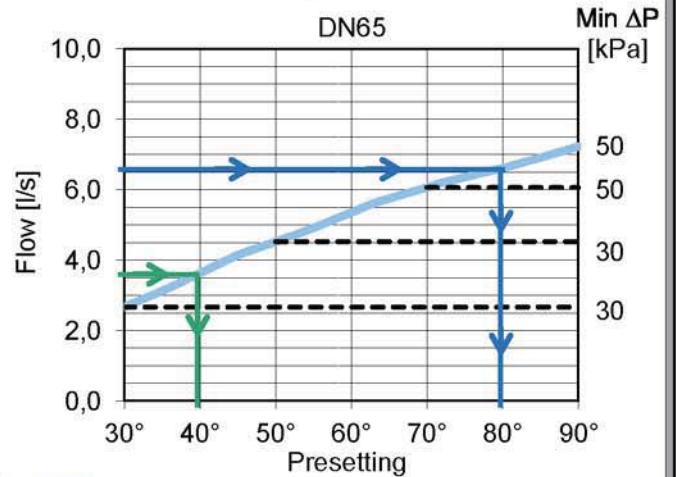
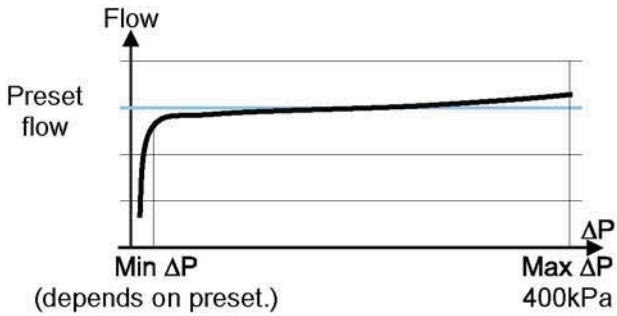
DN	ØF [mm]	ØE [mm]	NxØD [mm]	HA [mm]	HB [mm]	L [mm]	I [mm]	Flow [l/s]	Weight [kg]
065	185	145	4x18	217	289	290	18	2,67-7,22	23,3
080	200	160	8x18	281	298	310	23	3,52-10,0	29,8
100	220	180	8x18	295	308	350	36	7,14-22,9	35,3
125	250	210	8x18	317	356	400	47	9,88-34,7	48,1
150	285	240	8x22	341	385	480	68	14,2-44,4	77,1





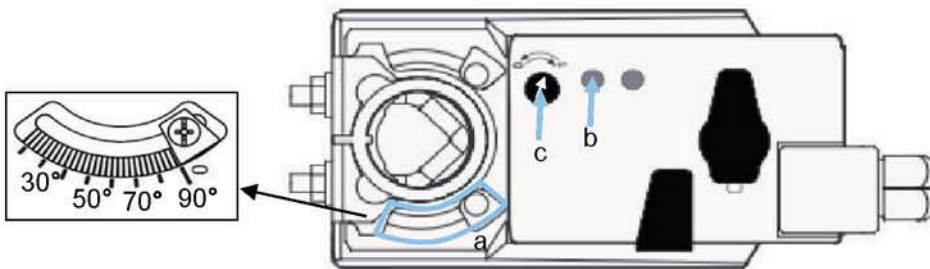
# PRESETTING

Presetting allows to define the maximum flow that will be kept constant (by means of dynamic balancing) while the valve is used in fully open condition in its working differential pressure range. Presetting determines also the minimum working differential pressure of the valve.



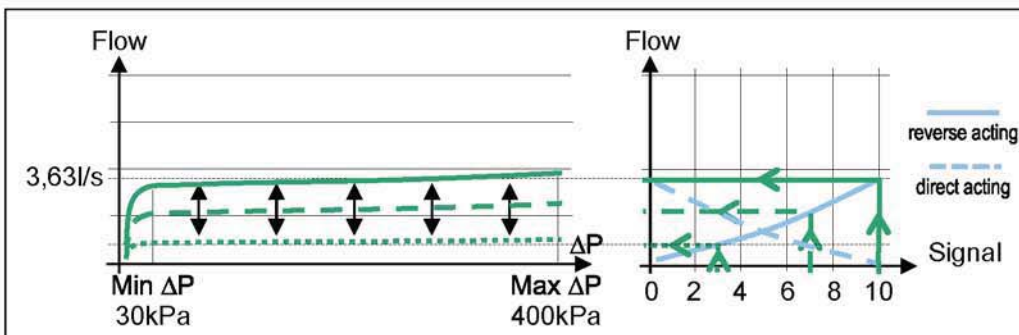
It is possible to preset the valve by acting on the mechanical stop of the actuator:

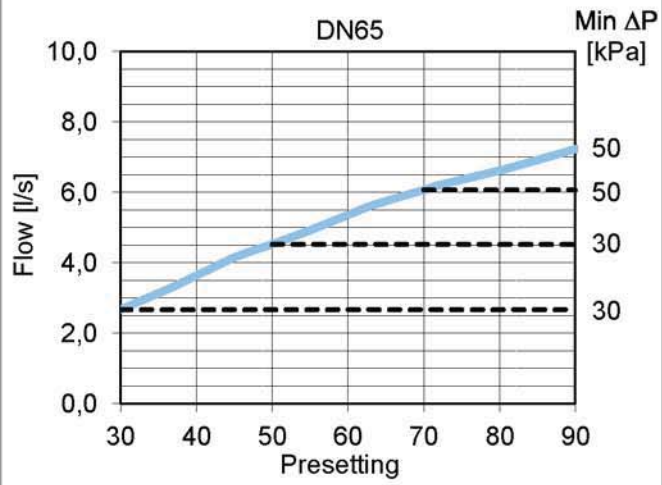
- with a screwdriver move the mechanical stop using the graduated scale as reference; the graphs in the next page show the correspondence between the presetting position and the regulated flow;
- start the auto stroke detection by pressing the "Adaption" button.



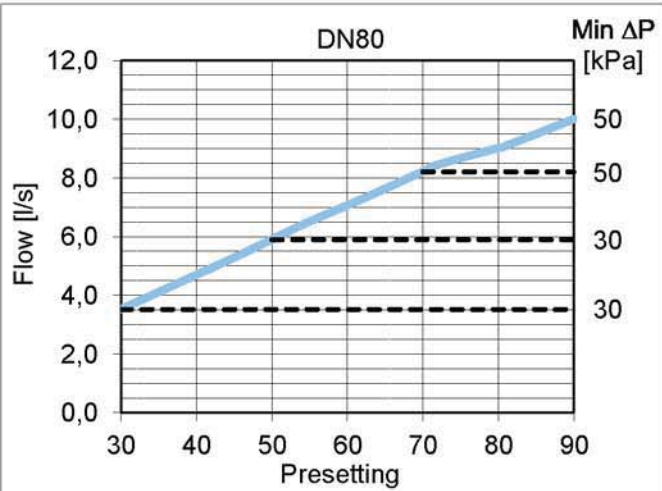
At the end of the auto stroke detection, the new maximum opening position is assigned to the opening signal, and the actuator will then redistribute the correspondence between the 0-10V signal and the opening position of the valve.

By acting on the indicate switch (c), it's possible to set the actuator on "reverse acting" (arrow on 1 as per factory settings, close with 0V signal) or "direct acting" (arrow on 0, open with 0V signal).

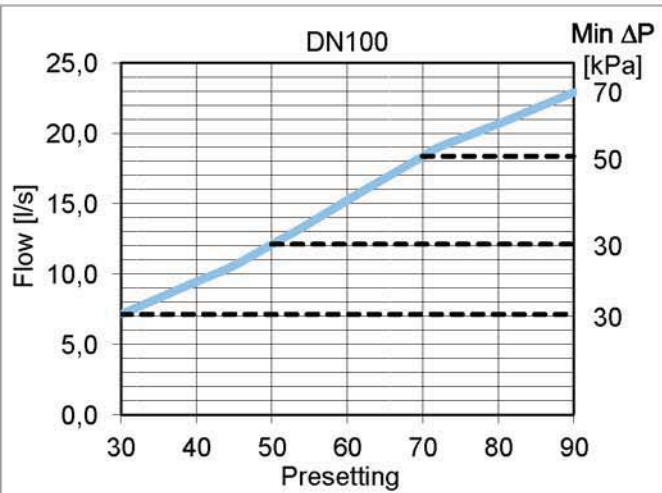




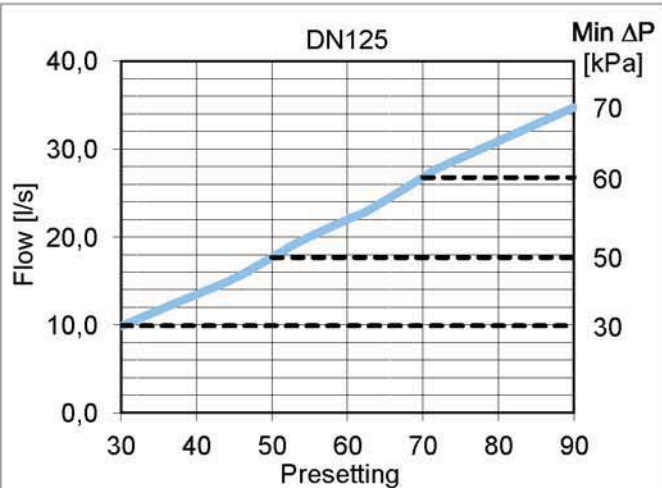
DN65 Preset.	Flow [l/s]	Flow [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	2,67	9,60	30
40°	3,63	13,1	30
50°	4,52	16,3	30
60°	5,35	19,3	50
70°	6,06	21,8	50
80°	6,61	23,8	50
90°	7,22	26,0	50



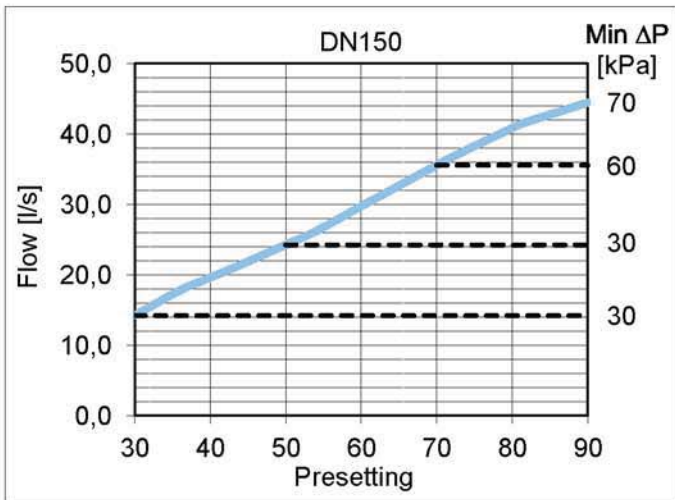
DN80 Preset.	Flow [l/s]	Flow [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	3,52	12,67	30
40°	4,69	16,9	30
50°	5,90	21,2	30
60°	7,06	25,4	30
70°	8,21	29,6	50
80°	9,01	32,4	50
90°	10,00	36,0	50



DN100 Preset.	Flow [l/s]	Flow [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	7,14	25,7	30
40°	9,45	34,0	30
50°	12,1	43,6	30
60°	15,2	54,8	50
70°	18,4	66,1	50
80°	20,7	74,4	70
90°	22,9	82,5	70



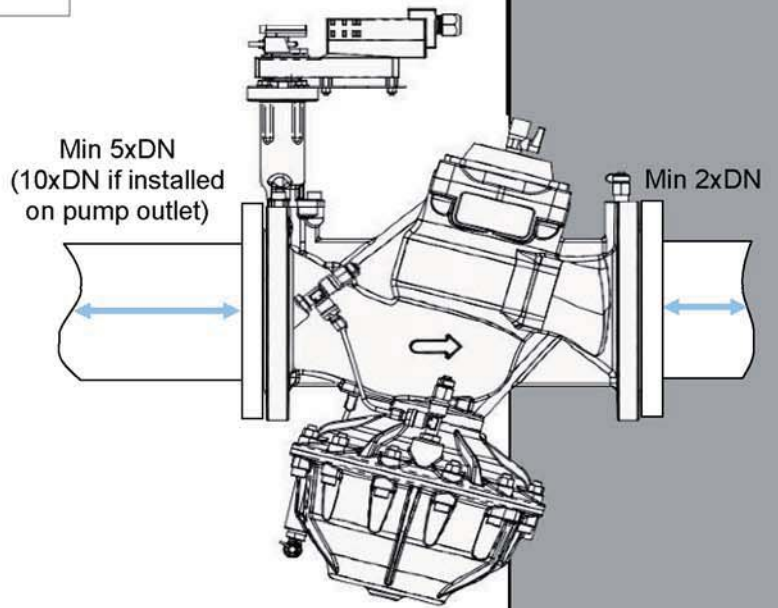
DN125 Preset.	Flow [l/s]	Flow [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	9,88	35,6	30
40°	13,5	48,5	30
50°	17,7	63,7	50
60°	22,0	79,1	50
70°	26,7	96,3	60
80°	30,9	111	70
90°	34,7	125	70



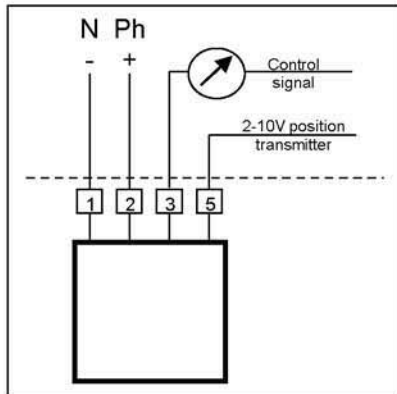
DN150 Preset.	Flow [l/s]	Flow [m <sup>3</sup> /h]	ΔP min. [kPa]
30°	14,2	51,1	30
40°	19,6	70,4	30
50°	24,2	87,3	30
60°	29,7	107	50
70°	35,5	128	60
80°	40,8	147	70
90°	44,4	160	70

## INSTALLATION

To obtain the best performances valve must be installed on a pipe with its same nominal size preceded and followed by straight pipe lengths as per figure indications.



## WIRING DIAGRAM



Ref.	Designation
N	Wiring to neutral
Ph	Wiring to phase
+	Wiring to + pole
-	Wiring to - pole

**WARNING:** the actuator can only detect control signals >0,5V.