

# Data Sheet T 8015 EN

Type 3241 Control Valve, Series 240 with pneumatic actuator

Type 3241-1 and 3241-7 Valves, GOST version



## Application

Control valve for process engineering and industrial applications

**Valve size** DN 25 to DN 250

**Pressure rating** PN 10 to PN 40

**Temperatures** -196°C to +450°C

## Special features

Type 3241 Globe Valve operated with:

- Type 3271 Pneumatic Actuator (Type 3241-1 Control Valve)
- Type 3277 Pneumatic Actuator (Type 3241-7 Control Valve)

Valve body made of:

- Low temperature or stainless steel casting

Undivided valve bonnet up to DN 150

Valve plug

- Metal seal
- Soft seal
- Welded sealing surfaces

The control valves with their modular design can be equipped with various accessories: positioners, limit switches, solenoid valves and other accessories according to IEC 60534-6-1<sup>1)</sup> and NAMUR recommendation.

## Versions

**Standard version** for temperatures ranging from -60 to +220 °C

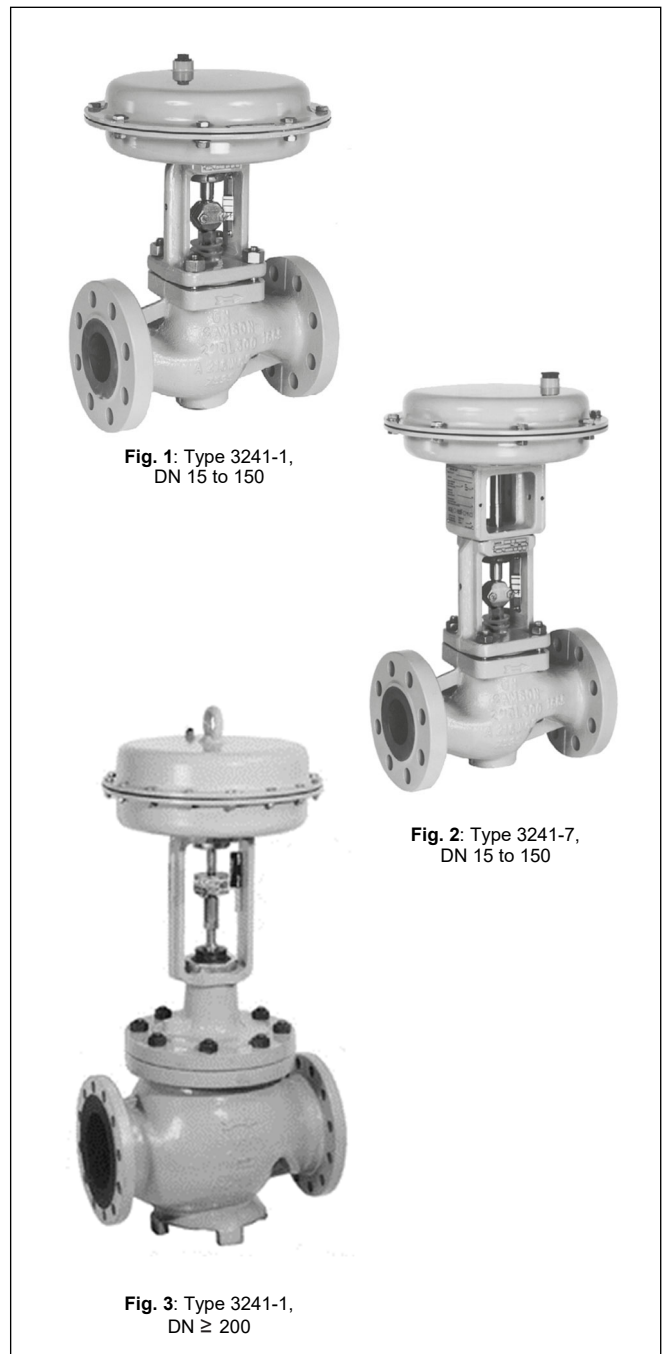
- **Type 3241-1** (Fig. 1) · DN 25 to 250 with Type 3271 Pneumatic Actuator, flange connection according to GOST 33259

- **Type 3241-7** (Fig. 2) · DN 25 to 250 with Type 3277 Pneumatic Actuator for integral positioner attachment, flange connection according to GOST 33259

## Further versions

- Welded ends
- Flange connection according to DIN EN 1092-1, ASME B16.5
- Adjustable packing
- Flow divider or AC-1/AC-2 Trim for noise reduction
- Plug guided by a cage
- Insulating section
- Stainless steel actuator
- Heating jacket - On request
- Additional handwheel

<sup>1)</sup> Accessories required. See associated actuator documentation.



## Design and principle of operation

The medium flows through the valve in the direction indicated by the arrow. The valve plug position determines the cross-sectional area between the seat and plug.

Depending on how the springs are arranged in the pneumatic actuator the valve has two different fail-safe positions that become effective when the supply air fails:

- Actuator stem extends (fail-close) - The valve closes when the supply air fails.
- Actuator stem retracts (fail-open) - The valve opens when the supply air fails.

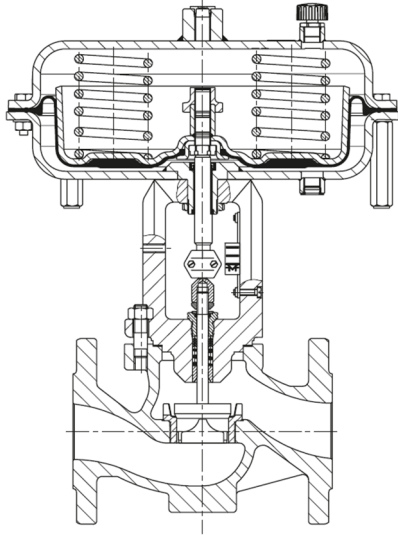


Fig. 4: Type 3241-1 Control Valve, DN 15 to 150 with Type 3271 Actuator

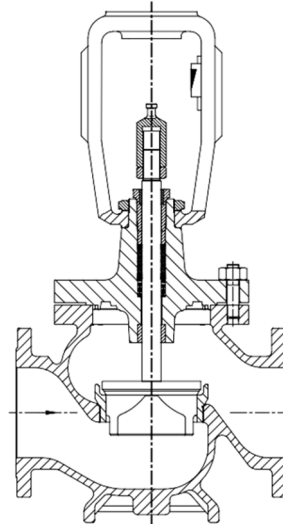



Fig. 5: Type 3241 Control Valve, DN ≥ 200

## Technical data

Table 1: Technical data for Type 3241 Valve

Valve size	DN	15 to 250	
Material		Low-temperature carbon steel 20ГЛ	Stainless steel 12X18H9ТЛ
Pressure rating	PN	10 · 16 · 25 · 40	
Type of connection	Flanges	All versions according to GOST (DIN and ASME versions on request)	
	Welded ends	On request	
Seat-plug seal		Metal seal · Soft seal · Welding	
Characteristic		Equal percentage · Linear (according to Information Sheet T 8000-3)	
Rangeability		50:1	
Heating jacket		Up to DN 100: PN 25 · DN for 125 and larger: PN 16	
Conformity		 GAZPROM 2.1-212-2008	
Additional certification		Register of the INTERGAZCERT System (GAZPROM PJSC) Register of Russian Industrial Products (Register of Minpromtorg)	
Temperature ranges in °C · Permissible operating pressures			
Body without insulating section		-10 to +220	
Body with insulating section		-60 to +350	-196 to +450
Valve plug	Metal seal	-196 to +450	
	Soft seal	-196 to +220	
Leakage class according to GOST 9544			
Valve plug	Metal seal	Standard: IV · Special version: V	
	Soft seal	VI	

**Table 2: Materials**

Standard version		
Valve body	Low-temperature carbon steel 20ГЛ	Stainless steel 12X18H9ТЛ
Valve bonnet	09Г2С / 20ГЛ	
Seat <sup>1)</sup>	1.4006 / 1.4008 / 12X13 / 20X13 / 08X18H10T / 12X18H10T	
Plug <sup>1)</sup>	1.4006(1.44004) / 1.4008 / 12X13 / 20X13 / 08X18H10T / 12X18H10T	
Plug seal	Seal ring for soft-seated plug: PTFE with glass fiber	
	Seal ring for balanced plug: PTFE with carbon or graphite ring	
Guide bushing	1.4104	1.4404
Packing	V-ring packing: PTFE with carbon · Spring: 1.4310	
Body gasket	Reinforced graphite	
Insulating section	20ГЛ	12X18H9ТЛ
Heating jacket	12X18H10T	

<sup>1)</sup> Seats and metal-seated plug also with Stellite® facing; for ≤ DN 100 plug up to seat bore 38 made of solid Stellite® available.

**Table 3:  $K_{vy}$  coefficients**

**Table 3.1: Versions without flow divider**

$K_{vy}$	0.1 0.16 0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40	60	80	63	100	160	200	260	250	360	630	1000
DN																							
15	•	•	•	•	•	•	•																
20	•	•	•	•	•	•	•	•															
25	•	•	•	•	•	•	•	•	•														
32		•	•	•	•	•	•	•	•	•													
40		•	•	•	•	•	•	•	•	•	•												
50		•	•	•	•	•	•	•	•	•	•	•											
65											•	•	•										
80											•	•	•	•		• <sup>1)</sup>							
100															•	•	•						
125															•	•	•	•					
150															•	•	•		•				
200																•	•			•	•	•	
250																•	•			•	•	•	•

<sup>1)</sup> With 19 mm overtravel (not with bellows seal)

**Table 3.2: Overview with flow divider ST 1 ( $K_{vy-1}$ ), ST 2 ( $K_{vy-2}$ ) or ST 3 ( $K_{vy-3}$ )**

$K_{vy}$	20.1 0.16 0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40	60	80	63	100	160	200	260	250	360	630	1000	
$K_{vy-1}$	-			1.45	2.2	3.6	5.7	9	14.5	22	36	54	72	57	90	144	180	234	225	320	560	900		
$K_{vy-2}$	-								8	13	20	32	48	63	50	80	125	160	210	200	290	500	800	
$K_{vy-3}$	-									7.5	12	20	30	-	-	47	75	120	-	-	190	270	480	750
Seat Ø [mm]	3	6		12			24		31	38	48	63	80	63	80	100	110	130	125	150	200	250		
Travel in mm	15												30				60			120				

**Table 3.3: Versions with flow divider ST 1 ( $K_{vy-1}$ )**

$K_{vy-1}$	1.45	2.2	3.6	5.7	9	14.5	22	36	54	72	57	90	144	180	234	225	320	560	900	
DN																				
15	•	•	•																	
20	•	•	•																	
25	•	•	•																	
32				•	•	•														
40				•	•	•	•													
50				•	•	•	•	•												
65							•	•	•											
80							•	•	•	•										
100										•	•	•								
125										•	•	•	•							
150										•	•	•		•						
200											•	•				•	•	•		
250											•	•				•	•	•	•	

**Table 3.4: Versions with flow divider ST 2 ( $K_{vy-2}$ )**

$K_{vy-2}$	8	13	20	32	48	50	80	125	210	200	290	500
DN												
15												
20												
25												
32	•	•										
40	•	•	•									
50	•	•	•	•								
65			•	•	•							
80			•	•	•							
100						•	•	•				
125							•	•				
150						•	•	•	•			
200							•	•		•	•	•
250							•	•		•	•	•

**Table 3.5: Versions with flow divider ST 3 ( $K_{vy-3}$ )**

$K_{vy-3}$	7.5	12	20	30	47	75	120	190	270	480
DN										
15										
20										
25										
32										
40										
50	• <sup>1)</sup>									
65		•	•	•						
80		•	•	•						
100					•					
125						•				
150					•	•	•			
200						•	•	•	•	
250					•	•	•	•	•	•

<sup>1)</sup> Without insulating section

Differential pressures: Permissible differential pressures are listed in Information Sheet ► T 8000-4 .

## Dimensions and weights

**Table 4:** Dimensions and weights for standard version of Type 3241-1 and Type 3241-7 Valves with flanges or welding ends

**Table 4.1:** Dimensions in mm for Type 3241 Valve, up to DN 150 · Without actuator

Valve	DN	25	40	50	80	100	150
Length L	mm	160	200	230	310	350	480
H1 for actuator	≤750v2 cm <sup>2</sup>	222	223		262	354	390
	1000 cm <sup>2</sup> 1400-60 cm <sup>2</sup>	-				413	450
	1400-120 cm <sup>2</sup> 2800 cm <sup>2</sup>	-					
H2		44	72		98	118	175

**Table 4.2:** Dimensions for Type 3271 and Type 3277 Pneumatic Actuators

Actuator area		cm <sup>2</sup>	120	175v2	350	355v2	750v2	1000	1400-60	1400-120	2800
Diaphragm ØD		mm	168	215	280	280	394	462	530	534	770
H <sup>1)</sup>		mm	69	78	82	121	236	403	337	598	713
H3 <sup>2)</sup>		mm	110	110	110	110	190	610	610	650	650
H5	Type 3277	mm	88	101	101	101	101	-	-	-	-
Thread	Type 3271	M30x1.5						M60x1.5		M100x2	
	Type 3277	M30x1.5						-	-	-	-
a	Type 3271		G 1/8 (1/8 NPT)	G 1/4 (1/4 NPT)	G 3/8 (3/8 NPT)	G 3/8 (3/8 NPT)	G 3/8 (3/8 NPT)	G 3/4 (3/4 NPT)	G 3/4 (3/4 NPT)	G 1 (1 NPT)	G 1 (1 NPT)
a2	Type 3277		-	G 3/8	G 3/8	G 3/8	G 3/8	-	-	-	-

<sup>1)</sup> Height including lifting eyelet or female thread and eyebolt according to DIN 580. Height of the swivel hoist may differ. Actuators up to 355v2 cm<sup>2</sup> without lifting eyelet or female thread

<sup>2)</sup> Minimum clearance required to remove the actuator

**Table 4.3:** Weights in kg for Type 3241-1 and Type 3241-7

Valve	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	250 -60/ -120
Weight without actuator (kg)		6	7.5	8	12	14	18	29	34	52	81	108	430	468	858

Actuator	cm <sup>2</sup>	120	175v2	350	355v2	750v2	1000	1400-60	1400-120	2800
Type 3271 (kg)	Without hand-wheel	2.5	6	8	15	36	80	70	175	450
	With hand-wheel Travel ≤80 mm	4	10	13	20	41	180	175	300	575
	With hand-wheel Travel ≤160 mm	-						425	700	
Type 3277 (kg)	Without hand-wheel	3.2	10	12	19	40	-			
	With hand-wheel	4.5	14	17	24	45	-			

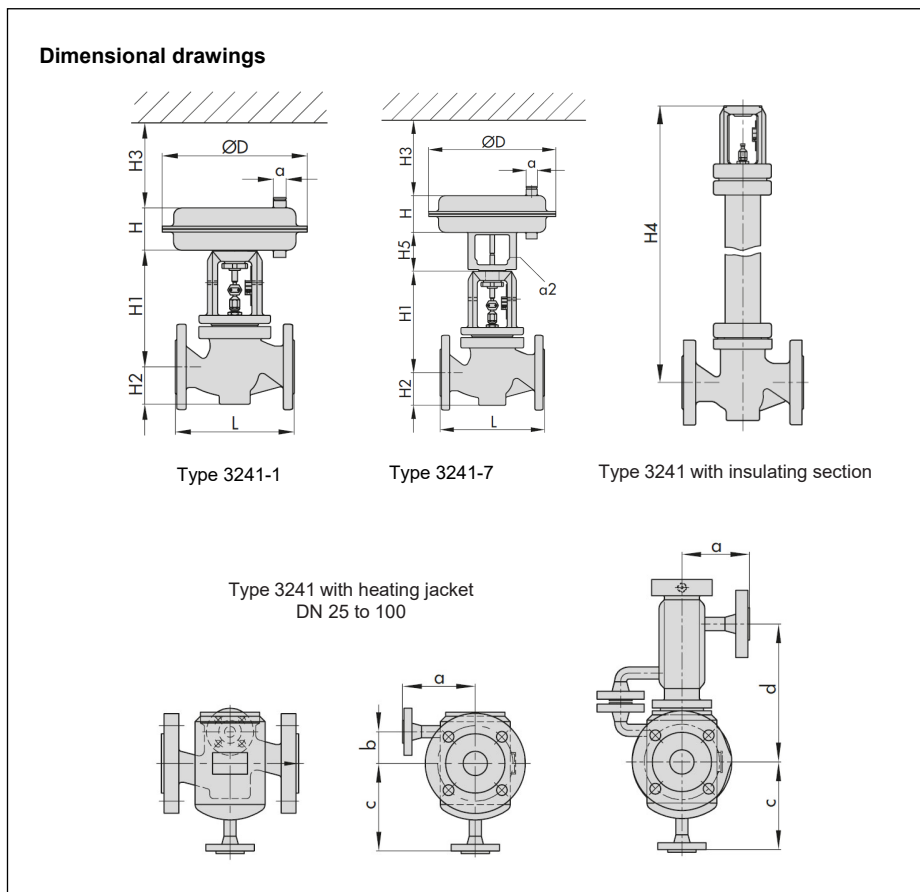
**Table 5: Dimensions and weights for Type 3241 Valve with insulating section**

**Table 5.1: Dimensions in mm and weights in kg for Type 3241 Valve, up to DN 150 · Without actuator**

Valve size		25	40	50	80	100	150
H4 for actuator	Insulating section	409	410	451	636	672	
	≤750v2 cm <sup>2</sup> Long insulating section	713	714	755	877	913	
	Insulating section					695	732
	1000 cm <sup>2</sup> / 1400-60 cm <sup>2</sup> Long insulating section					936	973
	Insulating section						
	1400-120 cm <sup>2</sup> / 2800 cm <sup>2</sup> Long insulating section						
Weight (kg)	With insulating section	11	20	24	42	70	138
	With long insulating section	15	24	28	46	78	146

**Table 6: Dimensions in mm for Type 3241 with heating jacket**

Valve size	DN	25	40/50	80	100	150
a	mm	110	140	180	200	265
b	mm	15	20	35	50	80
c	mm	140	170	215	255	130
d	mm	190	190	230	320	355



**Ordering text**

Globe valve	Type 3241	Pressure	p <sub>1</sub> and p <sub>2</sub> in bar (absolute pressure)
Valve size	DN ...		
Pressure rating	PN ...	Valve accessories	Positioner and/or limit switch
Body material	Table 2		
Type of connection	Flanges		
Seat-plug seal	Metal seal, soft seal, welding		
Characteristic	Equal percentage or linear	<b>Associated Information Sheet</b>	▶ <b>T 8000-X</b>
Pneumatic actuator	Type 3271 or Type 3277	<b>Associated Data Sheets for Pneumatic actuators</b>	▶ <b>T 8310-1 to -3</b>
Fail-safe position	Fail-close or fail-open	<b>Associated Mounting and Operating Instructions</b>	▶ <b>EB 8015</b>
Process medium	Type, density and temperature	<b>Associated Safety Manual</b>	▶ <b>SH 8015</b>
Max. flow rate	in kg/h or m <sup>3</sup> /h		

Specifications subject to change without notice.