



TI-P357-30  
 CH Issue 10

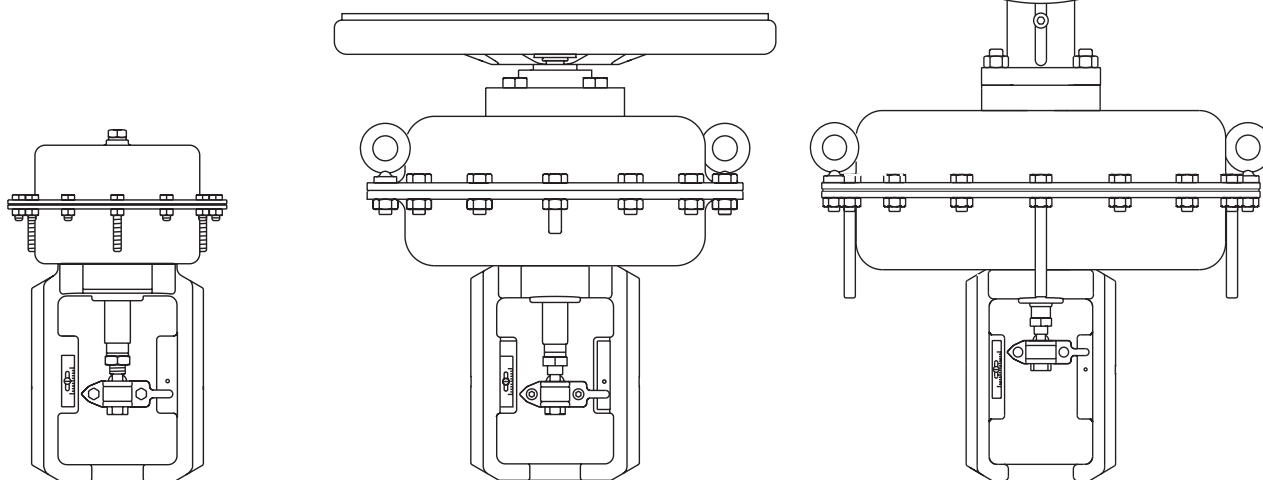
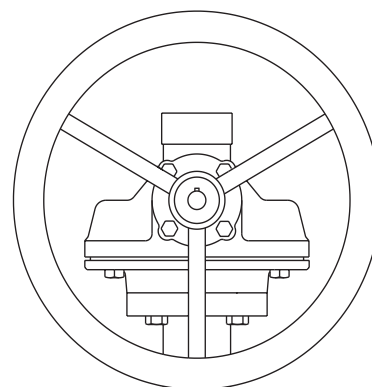
# PN9000 Series Pneumatic Actuators for use with Spira-trol™ Control Valves

## Description

The PN9000 series actuators are a compact range of linear actuators that are available in 3 diaphragm sizes for matching the requirements of valves at various differential pressures. Each actuator is fitted with a mechanical travel indicator and incorporates a fully-rolling diaphragm, which provides good linearity over the operating stroke.

<b>Available types</b>	<b>PN</b> = Standard	<b>Suffix E</b> = Spring-extend
	<b>PNP</b> = Electroless nickel plated	<b>Suffix R</b> = Spring-retract
<b>Optional extra</b>	<b>Manual handwheel</b>	<b>Suffix H</b>
	<b>Stainless steel bolting</b>	<b>Suffix S</b>
<b>Fast speed</b>		<b>Suffix F</b>

**Important note:** Throughout this document, reference has been made to the PN actuator.



PN9100

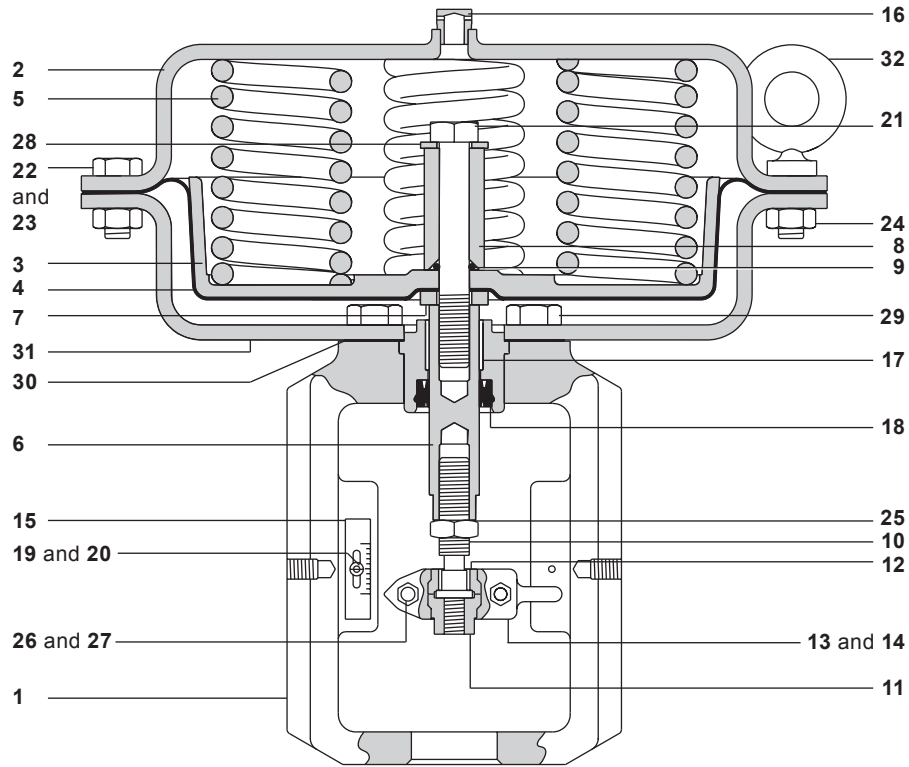
PN9200EH

PN9337RH

## Actuator force available in relation to motive air pressure

Actuator	Area of diaphragm (cm <sup>2</sup> )	Spring rating (bar)		Spring force E = Closed / R = Opened (N)	Actuator force available in relation to motive air pressure (N)					
					1	2	3	4	5	6
PN91_0_	100	0.2	1.0	200		1000	2000	3000	4000	5000
PN91_0_	100	0.4	1.2	400		800	1800	2800	3800	4800
PN91_6_	100	1.0	2.0	1000			1000	2000	3000	4000
PN91_3_	100	2.0	4.0	2000					1000	2000
PN92_0_	340	0.2	1.0	680		3400	6800	10200	13600	17000
PN92_0_	340	0.4	1.2	1360		2720	6120	9520	12920	16320
PN92_6_	340	1.0	2.0	3400			3400	6800	10200	13600
PN92_3_	340	2.0	4.0	6800					3400	6800
PN93_0_	670	0.2	1.0	1340		6700	13400	20100		
PN93_0_	670	0.4	1.2	2680		5360	12060	18760		
PN93_6_	670	1.0	2.0	6700			6700	13400		
PN93_7_	670	2.5	3.5	16750				3350		

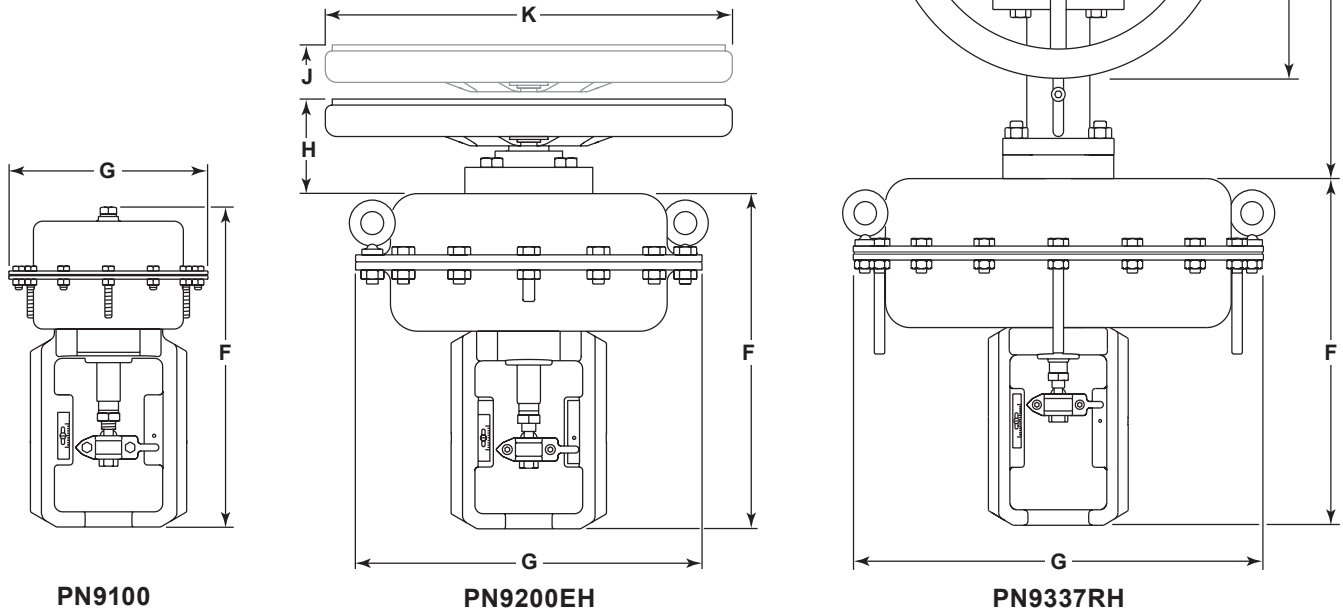
## Materials



No.	Part	Material		
1	Yoke	SG iron		
2	Upper diaphragm housing	Carbon steel (plated)		
3	Diaphragm plate	Aluminium		
4	Diaphragm	Reinforced NBR		
5	Spring	Spring steel		
6	Spindle	Stainless steel		
7	Washer	Carbon steel (plated)		
8	Spacer	Carbon steel (plated)		
9	'O' ring	Viton		
10	Connector	Stainless steel	BS 970 431 S29	
11	Adaptor	Stainless steel	BS 970 431 S29	
12	Collar	PN9000	Carbon steel	
		PNP9000	Stainless steel	1.4057 or AISI 420
		PN9000S	Stainless steel 316L	
13	Clamp front	Stainless steel	BS 3100 Pt 2 304 C15	
14	Clamp rear	Stainless steel	BS 3100 Pt 2 304 C15	
15	Scale	Stainless steel	BS 1449 304 S16	
16	Vent plug	Brass		
17	Bearing	PTFE/steel composite		
18	Seal	Polyurethane		
19	Pan head screw	PN9000	Carbon steel (plated)	
20	Nyloc nut	PNP9000	Stainless steel	A2 - 70
		PN9000S	Stainless steel	A2 - 70
21	Bolt	Carbon steel (plated)	Gr. 8.8	
22	Hex. head screw (short)	PN9000	Carbon steel (plated)	Gr. 8.8
23	Hex. head screw (long)	PNP9000	Stainless steel	A2 - 70
24	Nut	PN9000S	Stainless steel	A2 - 70
		PN9000	Carbon steel (plated)	
		PNP9000	Stainless steel	A2 - 70
25	Lock-nut	PN9000S	Stainless steel	A2 - 70
		PN9000	Carbon steel (plated)	Gr. 8.8
		PNP9000	Stainless steel	A2 - 70
26	Socket head screw	PN9000	Carbon steel (plated)	Gr. 8.8
27	Nut	PNP9000	Stainless steel	A2 - 70
		PN9000S	Stainless steel	A2 - 70
28	Washer	Carbon steel (plated)		
29	Screw	Carbon steel (plated)	Gr. 8.8	
30	Gasket	Reinforced Graphite		
31	Lower diaphragm housing	Carbon steel (plated)		
32	Lifting eye	PN9000	Cast steel	
		PNP9000	Cast steel	
		PN9000S	Stainless steel 316L	

## Technical data

Temperature range	- 20 °C to +110 °C	
Maximum operating inlet pressure	PN9100	6 bar g
	PN9200	6 bar g
	PN9300	4 bar g
Air supply connection	1/4" NPT	
Actuator travel	PN9100	20 mm
	PN922_ and PN932_	20 mm
	PN923_ and PN933_	30 mm



## Dimensions/weights (approximate) in mm and kg

Actuator range	F	G	H	J (Handwheel lifted)	K	Weight	
						Actuator	With handwheel
PN9100E and variants	275	170	55	75	225	6	+ 5.86
PN9100R and variants	275	170	120	140	225	6	+ 2.50
PN9200E and variants	300	300	65	85	350	17	+ 7.20
PN9200R and variants	300	300	132	152	350	17	+ 3.77
PN9230E and variants	335	300	65	95	350	17	+ 3.77
PN9230R and variants	335	300	122	152	350	17	+ 3.77
PN9320E and variants	325	390	65	85	350	27	+ 7.20
PN9320R and variants	325	390	132	152	350	27	+ 3.77
PN9330E and variants	335	390	65	95	350	27	+ 7.20
PN9330R and variants	335	390	122	152	350	27	+ 3.70
PN9336E and variants	335	390	65	95	350	27	+ 7.20
PN9336R and variants	335	390	122	152	350	27	+ 3.77
PN9337E and variants	335	390	410	410	350	27	+ 21.00
PN9337R and variants	335	390	410	410	350	27	+ 21.00

## How to use the sizing data on pages 4 to 23:

The following tables supply guidance as to the sizing of the PN9000 when it is used on a Spira-trol™ control valve.

### Two conditions are illustrated in tabular form:

**Class IV shut-off** - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class IV.

**Class VI shut-off** - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class VI.

### To select a suitable actuator:

- Identify the column containing the valve and gland material selected.
- Identify the maximum operating pressure condition, including any transient pressures likely to occur, within the selected column.
- Read back to the left hand side of the table to identify the suitable actuator for the application.

For conditions outside of those illustrated please contact Spirax Sarco.

**Maximum differential pressures for Class IV shut-off - PN9000E**  
**Unbalanced control valves with PTFE stem seal**

		Maximum differential pressures (bar)																								
Actuator	Spring range bar	DN15 - DN25 (½" - 1")												DN32 - DN50 (1¼" - 2")						DN65 - DN100 (2½" - 4")						
		PTFE												PTFE						PTFE						
		Valve size	Kv	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16	
PN9126E	1 - 2	6	12.8	22.0	29.8	90.6	90.6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9123E	2 - 4	6	39.1	61.3	79.5	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9220E	0.2 - 1.0	6	4.4	9.5	13.9	49.9	49.9	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9220E	0.4 - 1.2	6	22.2	36.2	47.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9226E	1 - 2	6	75.9	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9236E	1 - 2	6																								
PN9223E	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9233E	2 - 4	6																								
PN9320E	0.2 - 1	4	21.7	35.4	46.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9320E	0.4 - 1.2	4	57.0	88.1	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9330E	0.4 - 1.2	4																								
PN9336E	1 - 2	4																								
PN9337E	2.5 - 3.5	4																								

# Maximum differential pressures for Class IV shut-off - PN9000E

## Unbalanced control valves with Graphite stem seal

Actuator	Spring range bar	Maximum differential pressures (bar)																								
		DN15 - DN25 (½" - 1")										DN32 - DN50 (1¼" - 2")										DN65 - DN100 (2½" - 4")				
		Valve size	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16		
		Maximum pressure	Graphite																							
PN9126E	1 - 2	6	4.9	10.3	14.8	52.4	52.4	89.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	17.3								
PN9123E	2 - 4	6	31.2	49.5	64.6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	51.8								
PN9220E	0.2 - 1.0	6				11.7	11.7	25.7	59.1	94.6	103.4	103.4	103.4	103.4	103.4	103.4	1.4									
PN9220E	0.4 - 1.2	6	14.4	24.4	32.8	98.2	98.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	35.3									
PN9226E	1 - 2	6	68.0	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4									
PN9236E	1 - 2	6																1.8	3.5	6.4	12.8	18.9	47.8			
PN9223E	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4									
PN9233E	2 - 4	6																6.6	11.2	18.4	34.2	48.9	103.4			
PN9320E	0.2 - 1	4	13.8	23.6	31.8	95.7	95.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	34.3									
PN9320E	0.4 - 1.2	4	49.1	76.3	98.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	100.9									
PN9330E	0.4 - 1.2	4																0.7	1.9	3.8	8.3	12.6	33.2			
PN9336E	1 - 2	4																6.4	11.0	18.0	33.5	48.0	103.4			
PN9337E	2.5 - 3.5	4																20.6	33.8	53.6	96.7	103.4	103.4			

## Maximum differential pressures for Class IV shut-off - PN9000E

Unbalanced control valves with PTFE or Graphite stem seal (low noise / Anti-cavitation)

Actuator	Spring range bar	Option	Maximum differential pressures (bar)																			
			P1 / A1						P1 / A1 / P2 / A2 / P3													
			DN15 - DN25 (½" - 1")		DN32 - DN50 (1¼" - 2")		DN65 - DN100 (2½" - 4")		DN65 - DN100 (2½" - 4")		DN65 - DN100 (2½" - 4")		DN65 - DN100 (2½" - 4")									
			PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite								
PN9126E	1 - 2	6	12.8	4.9	1.2																	
PN9123E	2 - 4	6	39.1	31.2	7.5		5.6															
PN9220E	0.2 - 1.0	6	4.4																			
PN9220E	0.4 - 1.2	6	22.2	14.4	3.5		1.6															
PN9226E	1 - 2	6	75.9	68.0	16.3		14.4															
PN9236E	1 - 2	6								4.7		3.5										1.8
PN9223E	2 - 4	6	103.4	103.4	37.7		35.8															
PN9233E	2 - 4	6								12.4		11.2										6.6
PN9320E	0.2 - 1	4	21.7	13.8	3.4		1.5															
PN9320E	0.4 - 1.2	4	57.0	49.1	11.8		9.9															
PN9330E	0.4 - 1.2	4								3.1		1.9										0.7
PN9336E	1 - 2	4								12.2		11.0										6.4
PN9337E	2.5 - 3.5	4								34.9		33.8										20.6

# Maximum differential pressures for Class IV shut-off - PN9000E

## Balanced control valves with PTFE or Graphite stem seal

Actuator		Maximum differential pressures (bar)																		
		DN40 - DN50 (1½" - 2")				DN65 - DN80 (2½" - 3")				DN100 (4")										
		36		25		100		63		25		160		100		63		36		
Valve size	Kv	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	
PN9126E	1 - 2	26.4	18.7	20.3	18.7															
PN9123E	2 - 4	12.9	8.3	10.8	8.3															
PN9220E	0.2 - 1.0																			
PN9220E	0.4 - 1.2	103.4	82.8	103.4	82.8															
PN9226E	1 - 2	91.5	68.7	89.5	68.7															
PN9236E	1 - 2					36.1	24.4	34.7	24.4	20.6	19.9	29.1	18.6	18.5	17.8	15.2	14.7	13.4	12.9	
PN9233E	2 - 4	45.4	33.3	43.4	33.3															
PN9233E	2 - 4					17.8	11.6	16.5	11.6	10.2	9.4	14.4	8.8	9.2	8.5	7.5	7.0	6.6	6.1	
PN9320E	0.2 - 1	103.4	102.5	103.4	102.5															
PN9320E	0.4 - 1.2	103.4	95.5	103.4	95.5															
PN9330E	0.4 - 1.2					49.9	34.2	48.6	34.2	28.6	27.8	40.3	26.0	25.6	24.9	21.1	20.5	18.5	18.0	
PN9336E	1 - 2					35.6	24.0	34.2	24.0	20.3	19.6	28.7	18.3	18.2	17.5	15.0	14.4	13.2	12.7	
PN9337E	2.5 - 3.5					8.6	5.1	7.2	5.1	4.9	4.1	6.9	3.9	4.4	3.7	3.6	3.0	3.2	2.7	

## Maximum differential pressures for Class IV shut-off - PN9000E

Balanced control valves with PTFE or Graphite stem seal (low noise / Anti-cavitation)

Actuator	Spring range bar	Option	Maximum differential pressures (bar)													
			P1 / A1						P1 / A1 / P2 / A2 / P3							
			DN40 - DN50		DN65 - DN80		DN100		DN40 - DN50		DN65 - DN80		DN100			
		Valve size	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
		Maximum pressure														
PN9126E	1 - 2	6	26.5						103.4				103.4			
PN9123E	2 - 4	6	12.9	6.1					103.4				103.4			
PN9220E	0.2 - 1.0	6														
PN9220E	0.4 - 1.2	6	103.4	103.4					103.4				103.4			
PN9226E	1 - 2	6	91.8	85.0					103.4				103.4			
PN9236E	1 - 2	6			36.1	34.7		29.1	28.0				103.4	103.4		103.4
PN9223E	2 - 4	6	45.6	38.7									103.4	103.4		
PN9233E	2 - 4	6			17.8	16.5		14.4	13.3				103.4	103.4		92.0
PN9320E	0.2 - 1	4	103.4	103.4									103.4	103.4		
PN9320E	0.4 - 1.2	4	103.4	103.4									103.4	103.4		
PN9330E	0.4 - 1.2	4			49.9	48.6		40.3	39.2				103.4	103.4		103.4
PN9336E	1 - 2	4			35.6	34.2		28.7	27.6				103.4	103.4		103.4
PN9337E	2.5 - 3.5	4			8.6	7.2		6.9	5.8				65.5	55.0		47.9
																40.3



## Maximum differential pressures for Class IV shut-off - PN9000E

KE, LE, KEA and LEA with bellows and PTFE or Graphite stem seal

Actuator	Spring range	Maximum pressure	Maximum differential pressures bar																																			
			DN15		DN20		DN25		DN32		DN40		DN50		DN65		DN80		DN100																			
PN9226E	1.0 - 2.0	6	PTFE	Graphite	40	40	40	40	36	PTFE	Graphite	29	PTFE	Graphite	27	PTFE	Graphite	21	PTFE	Graphite	10	PTFE	Graphite	7	PTFE	Graphite	6	4	5	5	3	3	2	2	2			
PN9236E	1.0 - 2.0	6																																				
PN9223E	2.0 - 4.0	6	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	37	27	25													
PN9233E	2.0 - 4.0	6																																				
PN9320E	0.4 - 1.2	4	39	24	29	17	18	18	10	12	6	3	1	1																								
PN9336E	1.0 - 2.0	4																																				
PN9337E	2.5 - 3.5	4																																				



**Maximum differential pressures for Class VI shut-off - PN9000E (Soft seat seal only)  
Unbalanced control valves with Graphite stem seal**

Actuator	Spring range bar	Maximum differential pressures (bar)																																																	
		DN15 - DN25 (1/2" - 1")												DN32 - DN50 (1 1/4" - 2")								DN65 - DN100 (2 1/2" - 4")																													
		Valve size	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16	Maximum pressure	Graphite							Graphite							Graphite											
PN9126E	1 - 2	6	14.9	22.5	28.6	74.4	74.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	3.3	4.8	11.4	14.9	22.5	28.6	3.7	5.9	9.4	16.8	23.6	55.0	6	Graphite							Graphite							Graphite						
PN9123E	2 - 4	6	41.2	61.8	78.3	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	9.6	13.6	31.8	41.2	61.8	78.3	8.5	13.6	21.4	38.2	53.6	103.4	6	Graphite							Graphite							Graphite						
PN9220E	0.2 - 1.0	6	6.5	9.9	12.7	33.7	33.7	53.2	53.2	95.7	95.7	103.4	103.4	103.4	103.4	103.4	103.4	1.3	1.9	4.9	6.5	9.9	12.7	3.7	5.9	9.4	16.8	23.6	55.0	6	Graphite							Graphite							Graphite						
PN9220E	0.4 - 1.2	6	24.3	36.6	46.5	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	5.6	7.9	18.8	24.3	36.6	46.5	8.5	13.6	21.4	38.2	53.6	103.4	6	Graphite							Graphite							Graphite						
PN9226E	1 - 2	6	78.0	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	18.4	25.9	60.3	78.0	103.4	103.4	8.5	13.6	21.4	38.2	53.6	103.4	6	Graphite							Graphite							Graphite						
PN9236E	1 - 2	6																												6	Graphite							Graphite							Graphite						
PN9223E	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	39.8	55.9	103.4	103.4	103.4	103.4	8.5	13.6	21.4	38.2	53.6	103.4	6	Graphite							Graphite							Graphite						
PN9233E	2 - 4	6																												6	Graphite							Graphite							Graphite						
PN9320E	0.2 - 1	4	23.8	35.8	45.5	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	5.5	7.8	18.3	23.8	35.8	45.5	8.5	13.6	21.4	38.2	53.6	103.4	4	Graphite							Graphite							Graphite						
PN9320E	0.4 - 1.2	4	59.1	88.5	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	13.9	19.6	45.6	59.1	88.5	103.4	8.5	13.6	21.4	38.2	53.6	103.4	4	Graphite							Graphite							Graphite						
PN9330E	0.4 - 1.2	4																												4	Graphite							Graphite							Graphite						
PN9336E	1 - 2	4																												4	Graphite							Graphite							Graphite						
PN9337E	2.5 - 3.5	4																												4	Graphite							Graphite							Graphite						

**Maximum differential pressures for Class VI shut-off - PN9000E (Soft seat seal only)  
Unbalanced control valves with PTFE or Graphite stem seal (low noise / Anti-cavitation)**

Actuator	Spring range bar	Option	Maximum differential pressures (bar)											
			P1 / A1		DN32 - DN50 (1 1/4" - 2")				DN65 - DN100 (2 1/2" - 4")				P1 / A1 / P2 / A2 / P3	
			PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
PN9126E	1 - 2	6	22.8	14.9	5.2	3.3	5.2	3.3	7.1	5.9	14.8	13.6	9.2	8.5
PN9123E	2 - 4	6	49.1	41.2	11.5	9.6	11.5	9.6	7.1	5.9	14.8	13.6	9.2	8.5
PN9220E	0.2 - 1.0	6	14.3	6.5	3.2	1.3	3.2	1.3	7.1	5.9	14.8	13.6	9.2	8.5
PN9220E	0.4 - 1.2	6	32.2	24.3	7.5	5.6	7.5	5.6	7.1	5.9	14.8	13.6	9.2	8.5
PN9226E	1 - 2	6	85.9	78.0	20.3	18.4	20.3	18.4	7.1	5.9	14.8	13.6	9.2	8.5
PN9236E	1 - 2	6	103.4	103.4	41.7	39.8	41.7	39.8	7.1	5.9	14.8	13.6	9.2	8.5
PN9223E	2 - 4	6	103.4	103.4	41.7	39.8	41.7	39.8	7.1	5.9	14.8	13.6	9.2	8.5
PN9233E	2 - 4	6	103.4	103.4	41.7	39.8	41.7	39.8	7.1	5.9	14.8	13.6	9.2	8.5
PN9320E	0.2 - 1	4	31.7	23.8	7.4	5.5	7.4	5.5	7.1	5.9	14.8	13.6	9.2	8.5
PN9320E	0.4 - 1.2	4	67.0	59.1	15.8	13.9	15.8	13.9	7.1	5.9	14.8	13.6	9.2	8.5
PN9330E	0.4 - 1.2	4	67.0	59.1	15.8	13.9	15.8	13.9	7.1	5.9	14.8	13.6	9.2	8.5
PN9336E	1 - 2	4	67.0	59.1	15.8	13.9	15.8	13.9	7.1	5.9	14.8	13.6	9.2	8.5
PN9337E	2.5 - 3.5	4	67.0	59.1	15.8	13.9	15.8	13.9	7.1	5.9	14.8	13.6	9.2	8.5



## Maximum differential pressures for Class IV shut-off - PN9000R

### Unbalanced control valves with PTFE stem seal

Actuator		Maximum differential pressures (bar)																							
		DN15 - DN25 (½" - 1")												DN32 - DN50 (1¼" - 2")						DN65 - DN100 (2½" - 4")					
		10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16		
Spring range bar	Valve size																								
	Kv	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16		
	Maximum pressure	PTFE																							
PN9126R	1 - 2	91.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	20.1	29.1	71.5	93.5	103.4	103.4	16.9	27.8	44.2	80.1	103.4	103.4		
PN9123R	2 - 4	39.1	61.3	79.5	103.4	103.4	103.4	103.4	103.4	103.4	103.4	7.5	11.5	30.7	40.9	63.6	82.0								
PN9220R	0.2 - 1.0	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	101.8	103.4	103.4	103.4	103.4	103.4								
PN9220R	0.4 - 1.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	97.5	103.4	103.4	103.4	103.4	103.4								
PN9226R	1 - 2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	80.4	103.4	103.4	103.4	103.4	103.4								
PN9236R	1 - 2																	16.9	27.8	44.2	80.1	103.4	103.4		
PN9223R	2 - 4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	37.7	53.8	103.4	103.4	103.4	103.4								
PN9233R	2 - 4																	7.3	12.4	20.2	37.4	53.4	103.4		
PN9320R	0.2 - 1	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4								
PN9320R	0.4 - 1.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4								
PN9330R	0.4 - 1.2																	24.2	39.5	62.5	103.4	103.4	103.4		
PN9336R	1 - 2																	16.6	27.3	43.5	78.9	103.4	103.4		
PN9337R	2.5 - 3.5																	2.4	4.6	8.0	15.7	23.0	57.2		

## Maximum differential pressures for Class IV shut-off - PN9000R

### Unbalanced control valves with Graphite stem seal

Actuator	Spring range bar	Maximum differential pressures (bar)																											
		DN15 - DN25 (½" - 1")										DN32 - DN50 (1¼" - 2")						DN65 - DN100 (2½" - 4")											
		Graphite										Graphite						Graphite											
		Valve size	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16					
		K <sub>v</sub>																											
		Maximum pressure																											
PN9126R	1 - 2	6	83.8	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	17.3	25.4	63.7	83.8	103.4	103.4	103.4						
PN9123R	2 - 4	6	31.2	49.5	64.6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	4.7	7.8	23.0	31.2	49.5	64.6							
PN9220R	0.2 - 1.0	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	99.0	103.4	103.4	103.4	103.4	103.4	103.4						
PN9220R	0.4 - 1.2	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	94.8	103.4	103.4	103.4	103.4	103.4	103.4						
PN9226R	1 - 2	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	77.7	103.4	103.4	103.4	103.4	103.4	103.4						
PN9236R	1 - 2	6																					16.2	26.6	42.4	76.9	103.4	103.4	
PN9223R	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	34.9	50.1	103.4	103.4	103.4	103.4	103.4						
PN9233R	2 - 4	6																					6.6	11.2	18.4	34.2	48.9	103.4	
PN9320R	0.2 - 1	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4						
PN9320R	0.4 - 1.2	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4						
PN9330R	0.4 - 1.2	4																					23.4	38.3	60.7	103.4	103.4	103.4	
PN9336R	1 - 2	4																					15.9	26.2	41.7	75.7	103.4	103.4	
PN9337R	2.5 - 3.5	4																					1.7	3.4	6.2	12.5	18.5	46.8	

## Maximum differential pressures for Class IV shut-off - PN9000R Unbalanced control valves with Graphite stem seal (low noise / Anti-cavitation)

Actuator	Spring range bar	Option	Maximum differential pressures (bar)											
			P1 / A1		DN32 - DN50 (1 1/4" - 2")				DN65 - DN100 (2 1/2" - 4")				P1 / A1 / P2 / A2 / P3	
			PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
PN9126R	1 - 2	6	91.7	83.8	20.1	18.2	27.2	26.6	27.2	26.6	16.9	16.2		
PN9123R	2 - 4	6	39.1	31.2	7.5	5.6								
PN9220R	0.2 - 1.0	6	103.4	103.4	101.8	99.9								
PN9220R	0.4 - 1.2	6	103.4	103.4	97.5	95.7								
PN9226R	1 - 2	6	103.4	103.4	80.4	78.6								
PN9236R	1 - 2	6					27.2	26.6	27.2	26.6	16.9	16.2		
PN9223R	2 - 4	6	103.4	103.4	37.7	35.8								
PN9233R	2 - 4	6					12.5	11.2	12.5	11.2	7.3	6.6		
PN9320R	0.2 - 1	4	103.4	103.4	103.4	103.4								
PN9320R	0.4 - 1.2	4	103.4	103.4	103.4	103.4								
PN9330R	0.4 - 1.2	4					39.6	38.3	39.6	38.3	24.2	23.4		
PN9336R	1 - 2	4					27.4	26.2	27.4	26.2	16.7	15.9		
PN9337R	2.5 - 3.5	4					4.7	3.4	4.7	3.4	2.5	1.7		



# Maximum differential pressures for Class IV shut-off - PN9000R

## Balanced control valves with PTFE or graphite stem seal

Actuator	Spring range bar	Maximum differential pressures (bar)																				
		DN40 - DN50 (1½" - 2")						DN65 - DN80 (2½" - 3")						DN100 (4")								
		36		25		63		100		63		25		160		100		63		36		
Valve size	Kv	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	
PN9126R	1 - 2	6	1.3	1.6	0.0																	
PN9123R	2 - 4	6	8.1	6.8	5.2																	
PN9220R	0.2 - 1.0	6																				
PN9220R	0.4 - 1.2	6	3.8	1.7	3.5	1.9																
PN9226R	1 - 2	6	17.6	15.6	14.1	12.5																
PN9236R	1 - 2	6					5.6	4.2	4.4	3.4												
PN9223R	2 - 4	6	40.6	38.6	31.7	30.2																
PN9233R	2 - 4	6					14.7	13.3	10.8	9.8												
PN9320R	0.2 - 1	4	3.6	1.6	3.3	1.8																
PN9320R	0.4 - 1.2	4	12.7	10.7	10.3	8.8																
PN9330R	0.4 - 1.2	4					3.6	2.3	3.0	2.0												
PN9336R	1 - 2	4					14.4	13.0	10.6	9.6												
PN9337R	2.5 - 3.5	4					41.4	40.0	29.6	28.6												

## Maximum differential pressures for Class IV shut-off - PN9000R

Balanced control valves with Graphite stem seal (low noise / Anti-cavitation)

Actuator	Spring range bar	Option	Maximum differential pressures (bar)													
			P1 / A1						P1 / A1 / P2 / A2 / P3							
			DN40 - DN50		DN65 - DN80		DN100		DN40 - DN50		DN65 - DN80		DN100			
		Valve size	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
		Maximum pressure														
PN9126R	1 - 2	6	1.3						12.5							
PN9123R	2 - 4	6	8.1	6.1					77.1							
PN9220R	0.2 - 1.0	6														
PN9220R	0.4 - 1.2	6	3.8	1.7					35.8	16.4						
PN9226R	1 - 2	6	17.6	15.6					103.4	103.4						
PN9236R	1 - 2	6			5.6	4.2					2.7			42.4	32.0	18.7
PN9223R	2 - 4	6	40.8	38.7					103.4	103.4						
PN9233R	2 - 4	6			14.7	13.3					10.1			103.4	101.5	69.6
PN9320R	0.2 - 1	4	3.6	1.6					34.5	15.1						
PN9320R	0.4 - 1.2	4	12.7	10.7					103.4	101.7						
PN9330R	0.4 - 1.2	4			3.6	2.3					1.1			27.7	17.2	7.9
PN9336R	1 - 2	4			14.4	13.0					9.9			103.4	99.5	68.1
PN9337R	2.5 - 3.5	4			41.4	40.0					31.6			103.4	103.4	103.4



**Maximum differential pressures for Class VI shut-off - PN9000R (Soft seat seal only)  
Unbalanced control valves with PTFE stem seal**

Actuator	Spring range bar	Maximum differential pressures (bar)																							
		DN15 - DN25 (½" - 1")						DN32 - DN50 (1¼" - 2")						DN65 - DN100 (2½" - 4")											
		10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16		
		PTFE																							
	Valve size	PTFE																							
	K <sub>v</sub>	101.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4		
	Maximum pressure	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
PN9126R	1 - 2	101.7	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9123R	2 - 4	49.1	73.6	93.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9220R	0.2 - 1.0	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9220R	0.4 - 1.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9226R	1 - 2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9236R	1 - 2																18.8	30.2	47.2	84.1	103.4	103.4			
PN9223R	2 - 4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9233R	2 - 4																9.2	14.8	23.2	41.4	58.1	103.4			
PN9320R	0.2 - 1	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9320R	0.4 - 1.2	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4			
PN9330R	0.4 - 1.2																26.0	41.9	65.5	103.4	103.4	103.4			
PN9336R	1 - 2																18.5	29.7	46.5	82.9	103.4	103.4			
PN9337R	2.5 - 3.5																4.3	7.0	11.0	19.7	27.7	64.4			

## Maximum differential pressures for Class VI shut-off - PN9000R (Soft seat seal only)

### Unbalanced control valves with Graphite stem seal

Actuator	Spring range bar	Maximum differential pressures (bar)																												
		DN15 - DN25 (½" - 1")								DN32 - DN50 (1¼" - 2")								DN65 - DN100 (2½" - 4")												
		Valve size	10	6.3	4	2.5	1.6	1	0.4	0.5	0.2	0.1	36	25	16	10	6.3	4	160	100	63	36	25	16						
		Kv	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
		Maximum pressure	93.8	61.8	78.3	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9126R	1 - 2	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9123R	2 - 4	6	41.2	61.8	78.3	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9220R	0.2 - 1.0	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9220R	0.4 - 1.2	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9226R	1 - 2	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4					
PN9236R	1 - 2	6																					18.0	29.0	45.4	80.9	103.4	103.4		
PN9223R	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4		
PN9233R	2 - 4	6																						8.5	13.6	21.4	38.2	53.6	103.4	
PN9320R	0.2 - 1	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4		
PN9320R	0.4 - 1.2	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4		
PN9330R	0.4 - 1.2	4																							25.3	40.7	63.7	103.4	103.4	
PN9336R	1 - 2	4																							17.8	28.6	44.7	79.7	103.4	103.4
PN9337R	2.5 - 3.5	4																							3.6	5.8	9.2	16.5	23.2	54.0

## Maximum differential pressures for Class VI shut-off - PN9000R

Unbalanced control valves with Graphite stem seal (low noise / Anti-cavitation)

Actuator	Spring range bar	Option	Maximum differential pressures (bar)											
			P1 / A1		DN32 - DN50 (1 1/4" - 2")				DN65 - DN100 (2 1/2" - 4")				P1 / A1 / P2 / A2 / P3	
			PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
PN9126R	1 - 2	6	101.7	93.8	24.1	22.2	24.1	22.2	30.2	29.0	30.2	29.0	18.8	18.0
PN9123R	2 - 4	6	49.1	41.2	11.5	9.6	11.5	9.6	14.8	13.6	14.8	13.6	9.2	8.5
PN9220R	0.2 - 1.0	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9220R	0.4 - 1.2	6	103.4	103.4	101.5	99.7	101.5	99.7	103.4	103.4	103.4	103.4	103.4	103.4
PN9226R	1 - 2	6	103.4	103.4	84.4	82.6	84.4	82.6	103.4	103.4	103.4	103.4	103.4	103.4
PN9236R	1 - 2	6	103.4	103.4	41.7	39.8	41.7	39.8	103.4	103.4	103.4	103.4	103.4	103.4
PN9223R	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9233R	2 - 4	6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9320R	0.2 - 1	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9320R	0.4 - 1.2	4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
PN9330R	0.4 - 1.2	4	103.4	103.4	41.9	40.7	41.9	40.7	29.7	28.6	29.7	28.6	26.0	25.3
PN9336R	1 - 2	4	103.4	103.4	7.0	5.8	7.0	5.8	7.0	5.8	7.0	5.8	4.3	3.6
PN9337R	2.5 - 3.5	4	103.4	103.4	7.0	5.8	7.0	5.8	7.0	5.8	7.0	5.8	4.3	3.6

## Maximum differential pressures for Class VI shut-off - PN9000R (Soft seat seal only)

KE, LE, KEA and LEA with bellows and PTFE or graphite stem seal

Actuator	Spring range	Maximum air pressure	Maximum differential pressures bar																	
			DN15		DN20		DN25		DN32		DN40		DN50		DN65		DN80		DN100	
PN9120R	0.2 - 1.0	6	PTFE	Graphite	40	40	40	40	40	40	40	28	25	20	18	PTFE	Graphite	32	20	20
PN9120R	0.4 - 1.2	6	40	40	40	40	40	40	40	40	26	24	19	17	PTFE	Graphite	32	20	20	
PN9125R	0.4 - 2.0	6	40	40	40	40	40	40	40	40	20	17	14	12	PTFE	Graphite	32	20	20	
PN9126R	1.0 - 2.0	6	40	40	40	40	40	40	40	40	20	17	14	12	PTFE	Graphite	32	20	20	
PN9123R	2.0 - 4.0	6	16	1	12	8	6	3	2	40	40	40	40	40	40	40	40	40	40	
PN9220R	0.2 - 1.0	6	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
PN9220R	0.4 - 1.2	6	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
PN9230R	0.4 - 1.2	6													40	40	32	20	20	
PN9226R	1.0 - 2.0	6	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	26	16	
PN9236R	1.0 - 2.0	4													40	40	26	16	16	
PN9223R	2.0 - 4.0	6	40	40	40	40	40	40	40	40	40	40	40	33	31					
PN9233R	2.0 - 4.0	6													17	17	11	11	7	
PN9320R	0.2 - 1.0	4	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
PN9320R	0.4 - 1.2	4	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
PN9330R	0.4 - 1.2	4													40	40	37	36	23	
PN9336R	1.0 - 2.0	4													39	38	25	24	15	
PN9337R	2.5 - 3.5	4													4	2	2	1	1	

## PN9000 series selection guide:

Before making your PN9000 series selection please reference pages 4 to 27 - Sizing data

### How to use the sizing data:

The tables supply guidance as to the sizing of the PN9000 when it is used on a SPIRA-TROL control valve.

### Two conditions are illustrated in tabular form:

**Class IV shut-off** - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class IV.

**Class VI shut-off** - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class VI.

### To select a suitable actuator:

- Identify the column containing the valve and gland material selected.
- Identify the maximum operating pressure condition, including any transient pressures likely to occur, within the selected column.
- Read back to the left hand side of the table to identify the suitable actuator for the application.

For conditions outside of those illustrated please contact Spirax Sarco.

<b>Type</b>	<b>PN</b> = Polyester powder coated (standard) <b>PNP</b> = Electroless nickle plated	<b>PNP</b>
<b>Series</b>	<b>9</b> = 9000 series	<b>9</b>
<b>Actuator size</b>	<b>1</b> = 100 cm <sup>2</sup> <b>2</b> = 340 cm <sup>2</sup> <b>3</b> = 670 cm <sup>2</sup>	<b>3</b>
<b>Valve travel</b>	<b>2</b> = 20 mm <b>3</b> = 30 mm	<b>3</b>
<b>Spring rating</b>	<b>0</b> = 0.2 to 1.0 bar (option for 0.4 to 1.2 bar) <b>3</b> = 2.0 to 4.0 bar <b>5</b> = 0.4 to 2.0 bar (PN9100 series only) <b>6</b> = 1.0 to 2.0 bar <b>7</b> = 2.5 to 3.5 bar (PN933_ series only)	<b>7</b>
<b>Spring action</b>	<b>E</b> = Spring-extend <b>R</b> = Spring-retract	<b>E</b>
<b>Yoke type (DN15 - DN50)</b>	<b>Blank</b> = Spira-trol™ K and L Series (M34) <b>B</b> = Spira-trol™ J Series (M50)	
<b>Manual override</b>	<b>H</b> = Handwheel (optional)	
<b>Stainless steel bolting</b>	<b>S</b> = Stainless steel bolting (optional)	
<b>Fast Speed</b>	<b>F</b> = version with the higher capacity of speed (possible only PN92_ and PN93_)	

### How to order/selection example:

1 off Spirax Sarco PNP9337E pneumatic actuator.



### Fast speed version

Fast speed versions are available for PN92xx and PN93xx. The fast speed version is a modified version of the existing PN but it also need to have the right pipe diameter of the air inlet as an example: **DN65 PTSUSS + PN9320 air inlet= 1" without**

	Time to close	Time to open
Standard	2.5s	5.1s
Fast	1.4s	2.9s

Same with 1/4" air inlet.

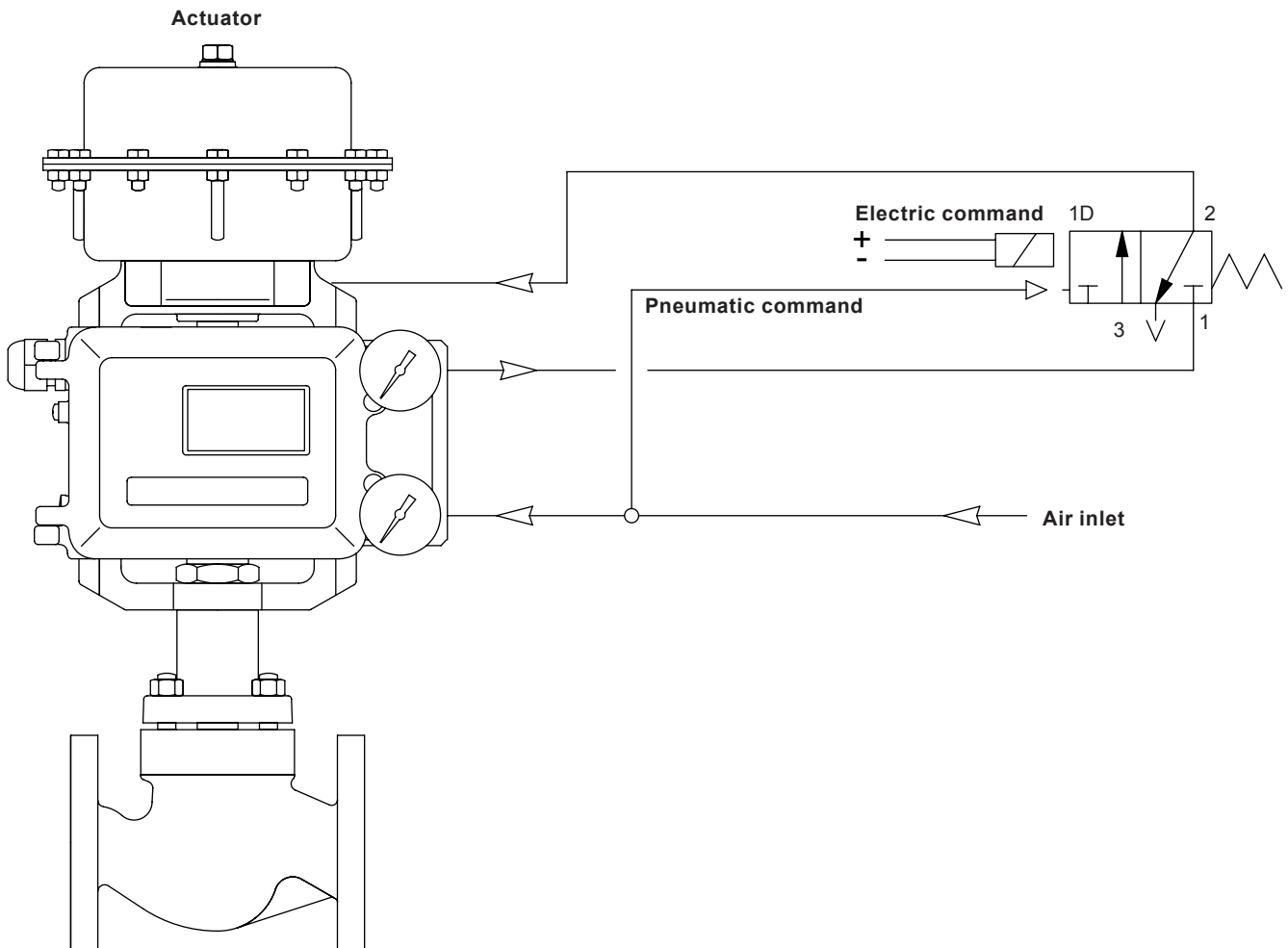
Fast	0.8s	1.5s
------	------	------

With a positioner, the fastest time to close/open will be limited by itself.

Same with 1/4" air inlet SP500.

Fast	1.4s	2.9s
------	------	------

For fail safe fast speed function, the below lay out could be used to shortcut the positioner.



## Spare parts

The only spares available are clearly indicated below and are common for both spring-extend and spring-retract versions.

### Available spares

Stem seal kit	17, 18, 30
Diaphragm kit	4, 9
Travel indicator kit	15, 19, 20
Spring kit	5
Linkage kit (suitable for Mk1 and Spira-trol™ valves)	10, 13, 14, 26, 27

### How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the actuator model.

**Example:** 1 - Stem seal kit for a PN9120 pneumatic actuator.

