



TI-P357-30-PT
CTLS Edição 15

PN9000 Série

Actuadores Pneumáticos

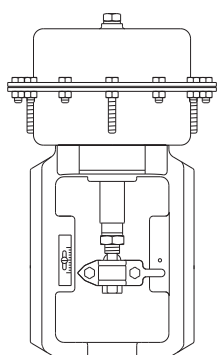
para utilização com as válvulas de controlo Spira-trol™

Descrição

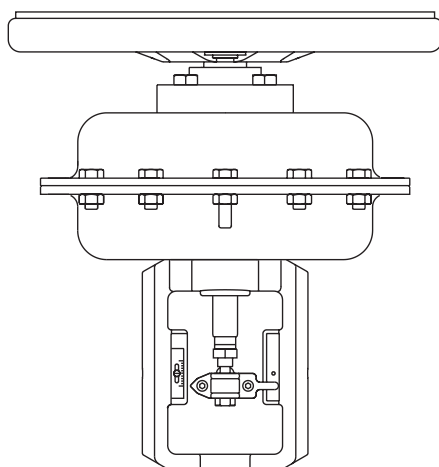
Os actuadores de série PN9000 são uma linha compacta de actuadores lineares disponíveis com 3 medidas de diafragma de forma a adequar-se a válvulas a várias pressões diferenciais.

Cada actuador tem um indicador de curso e um diafragma integralmente rolante, que proporciona uma boa linearidade em todo o curso de operação.

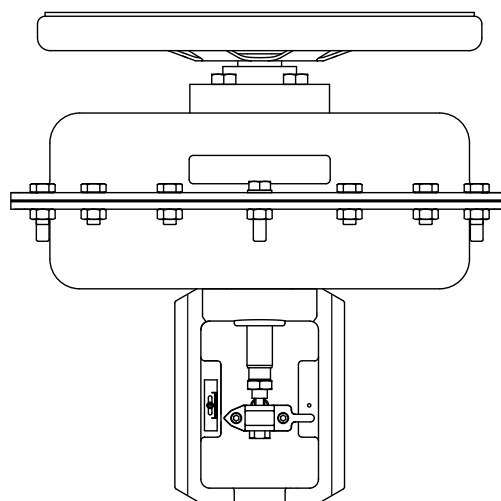
Tipos disponíveis	PN = Standard	Sufixo E = Mola estendida	Nota importante: As referências feitas ao longo deste documento dizem respeito aos actuadores PN.
		Sufixo R = Mola retraída	
Extra opcional	Manípulo	Sufixo H	
	Parafusos anti-corrosivos	Sufixo S	
Velocidade Rápida		Sufixo F	



PN9100



PN9200EH



PN9336EH

Força disponível no actuador em relação à pressão de ar motriz

Actuador	Área do diafragma (cm²)	Gama das molas (bar)		Força das molas E = Fechado / R = Aberto (N)	Força do actuador em relação à pressão do ar motriz (N)					
					1	2	3	4	5	6
PN91_0 _	96	0,2	1,0	192		968	1920	2880	3840	4800
PN91_0 _	96	0,4	1,2	384		768	1728	2688	3648	3840
PN91_6 _	96	1,0	2,0	960			960	1920	2880	3840
PN91_3 _	96	2,0	4,0	1920					960	1920
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		

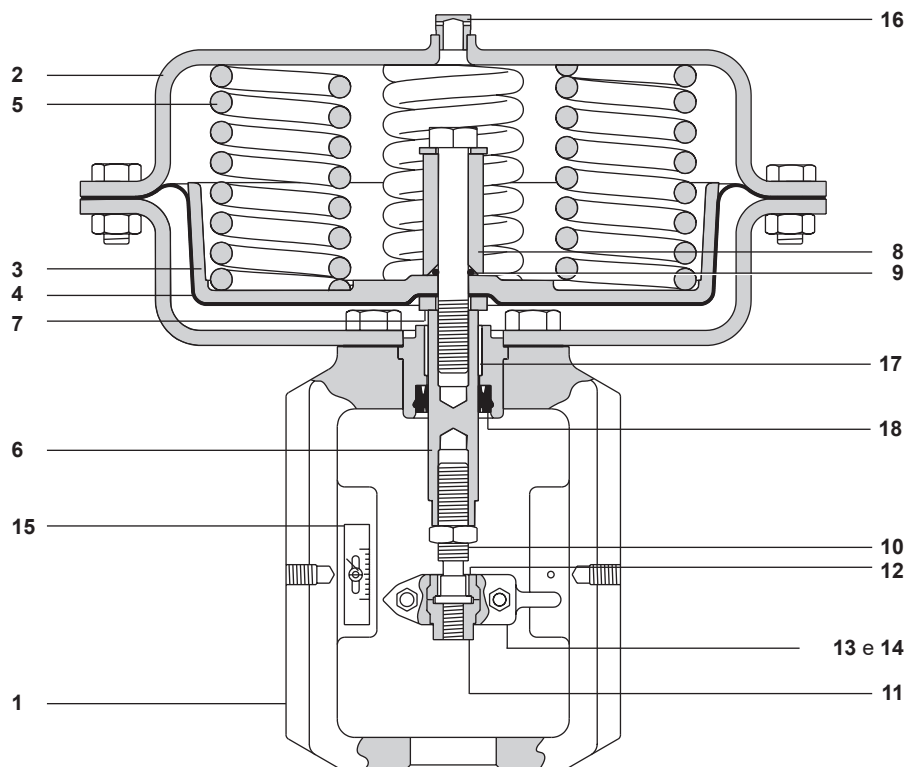
Dados técnicos

Gama de temperatura	Diafragma NBR reforçado	20 °C a +110 °C
	EPDM (versão T)	-20 °C a +130 °C
Pressão máxima de operação na entrada	PN9100	6 bar g
	PN9200	6 bar g
	PN9300E	4 bar g
	PN9300R	2,7 bar g
Ligação de ar de Alimentação		1/4" NPT
Curso do actuador	PN9100	20 mm
	PN922_ e PN932_	20 mm
	PN923_ e PN933_	30 mm
Diafragma NBR reforçado		

Conformidade

O actuador série PN9000, quando acoplado à válvula de controlo Spira-trol™ (conforme definido nas folhas de Informação Técnica TI-S24-71 e TI-S24-72), cumpre os requisitos da Directiva de Máquinas 2006/42EC. Consulte as Instruções de Instalação e Manutenção para a série PN9000 (IM-P357-29) e a válvula Spira-trol™ (IM-S24-42) para obter informações sobre potenciais perigos e segurança relacionados com a instalação, comissionamento, manutenção e eliminação do conjunto do produto e das suas peças componentes.

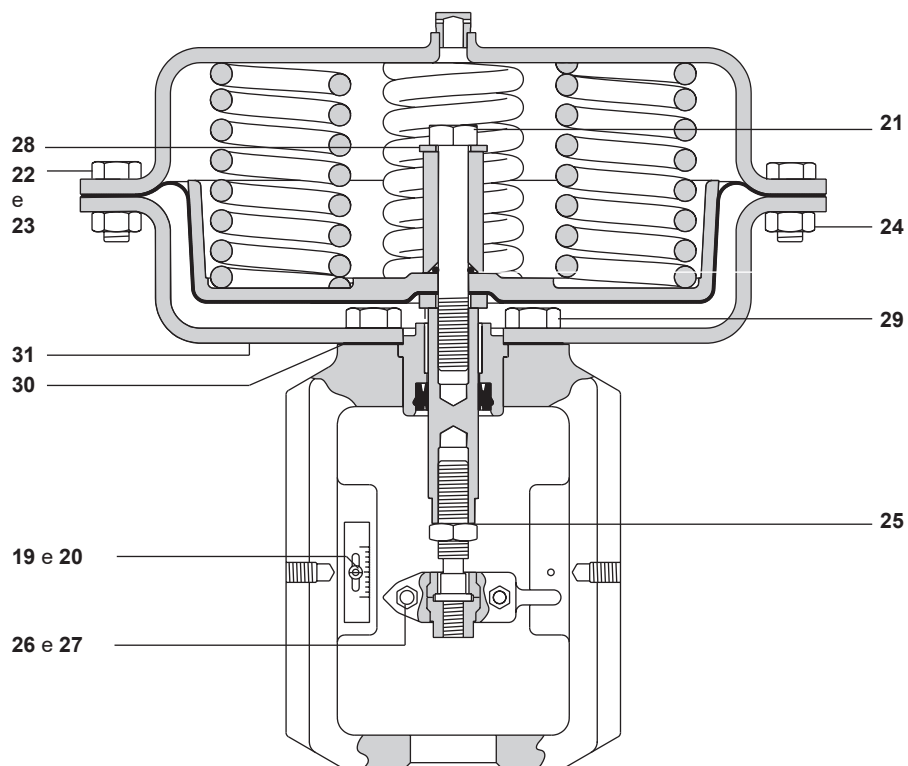
Materiais



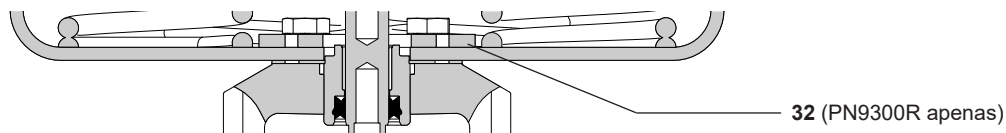
No.	Peça	Material	
1	Forquilha	Ferro nodular	
2	Caixa superior do diafragma	Aço carbono (zincado)	
3	Prato do diafragma	Alumínio	
4	Membrana (EPDM opcional para a versão T)	NBR reforçado	
5	Mola	Aço de mola	
6	Haste	Aço inoxidável	
7	Anilha	Aço carbono (zincado)	
8	Espaçador	Aço carbono (zincado)	
9	'O' ring	Viton	
10	Conector	Aço inoxidável	BS 970 431 S29
11	Adaptador	Aço inoxidável	BS 970 431 S29
12	Colar	Aço inoxidável	1,4057
13	Grampo frontal	Aço inoxidável	BS 3100 Pt 2 304 C15
14	Grampo traseiro	Aço inoxidável	BS 3100 Pt 2 304 C15
15	Escala	Aço inoxidável	BS 1449 304 S16
16	Bujão de alívio	Latão	
17	Chumaceira	Compósito PTFE/aço	
		FKM para a versão T	
18	Vedante	Poliuretano	

Materiais continua na página seguinte

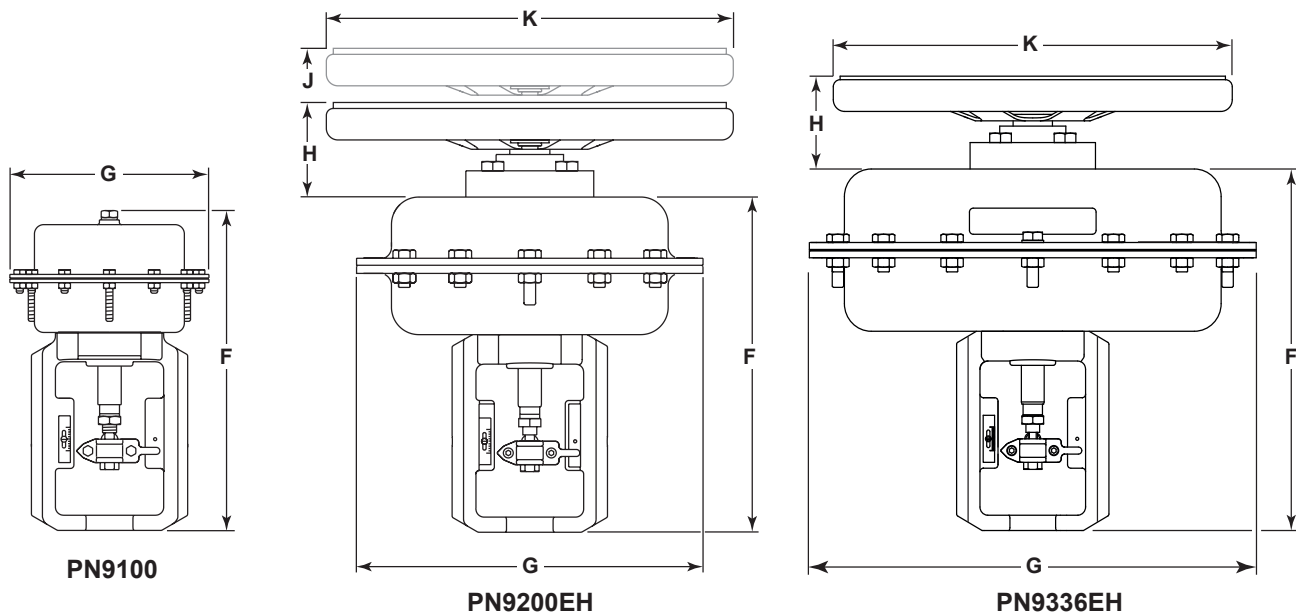
Materiais (continuação)



No.	Peça		Material	
19	Parafuso da escala	PN9000	Aço carbono (zincado)	
20	Porca de bloqueio	PN9000S	Aço inoxidável	A2 - 70
21	Parafusos		Aço carbono (zincado)	Gr. 8,8
22	Parafuso hexagonal (curto)	PN9000	Aço carbono (zincado)	Gr. 8,8
23	Parafuso hexagonal (longo)			
24	Porca	PN9000S	Aço-carbono (revestido a Zn. e A1.)	Gr. 8,8
25	Porca de bloqueio		Aço inoxidável	A2 - 70
26	Parafuso hexagonal	PN9000	Aço carbono (zincado)	Gr. 8,8
27	Porca	PN9000S	Aço inoxidável	A2 - 70
28	Anilha		Aço carbono (zincado)	
29	Parafuso de cabeça sextavada		Aço carbono (zincado)	Gr. 8.8 (Gr. 10.9 para PN9300R)
30	Junta		Grafite reforçada	
31	Caixa inferior do diafragma		Aço carbono (zincado)	
32	Placa impulso	PN9300R apenas	Aço carbono	



Dimensões/pesos (aproximado) em mm e kg



Gama de actuadores	F	G	H	J (Volante levantado)	K	Peso	
						Actuador	Com volante
PN9100E e variantes	275	170	55	75	225	6	+ 5,86
PN9100R e variantes	275	170	120	140	225	6	+ 2,50
PN9200E e variantes	300	300	65	85	350	17	+ 7,20
PN9200R e variantes	300	300	132	152	350	17	+ 3,77
PN9230E e variantes	335	300	65	95	350	17	+ 3,77
PN9230R e variantes	335	300	122	152	350	17	+ 3,77
PN9320E e variantes	325	390	65	85	350	27	+ 7,20
PN9320R e variantes	325	390	132	152	350	27	+ 3,77
PN9330E e variantes	335	390	65	95	350	27	+ 7,20
PN9330R e variantes	335	390	122	152	350	27	+ 3,70
PN9336E e variantes	335	390	65	95	350	27	+ 7,20
PN9336R e variantes	335	390	122	152	350	27	+ 3,77
PN9337E e variantes	335	390	410	410	350	27	

Como usar os dados para dimensionamento nas páginas 6 a 25

As tabelas seguintes fornecem orientação quanto ao dimensionamento do PN9000 quando este é utilizado numa válvula de controlo Spira-trol™.

Na tabela são indicadas duas condições:

Classe de vedação IV - Tem uma vedação conforme o requerido na BS 5793-4 (IEC 60534-4) classe IV.

Classe de vedação VI - Tem uma vedação conforme o requerido na BS 5793-4 (IEC 60534-4) classe VI.

Para seleccionar o actuador adequado:

- Identificar a coluna que contém a válvula e o material do empanque seleccionado.
- Identificar a condição de pressão máxima de funcionamento, incluindo quaisquer pressões transitórias susceptíveis de ocorrer, na coluna seleccionada.
- Volte a ler o lado esquerdo da tabela para identificar o actuador adequado para a aplicação.

Para condições fora dos valores indicados, consulte a Spirax Sarco.

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Com sede em metal (T & S)
 - Spira-trol
 - DN15 - 25 (½" - 1")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																											
		Tamanho válvula	DN15-25 (1/2"-1")																											
		Kvs (Cv)	0,01-0,07 (0,012-0,081)				0,1-0,2 (0,12-0,23)				0,5 (0,58)				1,0 (1,2)				1,6 (1,8)				2,5 (2,9)							
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D				
PN9120E	0,2-1,0	6,0	103,4				50,2																							
PN9120E	0,4-1,2	6,0	103,4			25,0	103,4					96,6			25,0			67,6			17,6			26,5			0,6	12,2		
PN9126E	1,0-2,0	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	25,0	103,4	103,4	103,4	25,0	103,4	81,4	25,0	103,4	103,4	25,0	85,5	47,3	25,0
PN9123E	2,0-4,0	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0
PN9220E	0,2-1,0	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	94,6	25,0	103,4	66,1	25,0	103,4	85,4	25,0	25,0	25,7	25,0	85,4	25,0	49,8	11,7	25,0	
PN9220E	0,4-1,2	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	98,2	25,0	
PN9226E	1,0-2,0	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	
PN9223E	2,0-4,0	6,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	
PN9320E	0,2-1,0	4,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	95,7	25,0	
PN9320E	0,4-1,2	4,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	

Actuador	Gama das molas bar	Gaiola standard (S)																								Gaiola de baixo ruído - P1			
		Tipo de gaiola		DN15-25 (½"-1")																									
		Tamanho válvula		4,0 (4,6)				4,9-6,3 (5,7-7,3)				7,2 (8,3)				10 (12)				11 (12,7)				2,5-4-6,3-10 (2,9-4,6-7,3-12)					
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D				
PN9120E	0,2-1,0																												
PN9120E	0,4-1,2	6,0																											
PN9126E	1,0-2,0	6,0	5,1																										
PN9123E	2,0-4,0	6,0	56,0	29,5	25,0	27,8	12,9	21,3	20,5	8,7	15,4	15,4	15,4	5,8	11,2	11,4	3,7	8,0	11,4	3,7	8,0	11,4	3,7	8,0	8,0				
PN9220E	0,2-1,0	6,0	103,4	103,4	25,0	75,5	60,6	25,0	58,2	46,4	25,0	45,9	36,4	25,0	36,2	36,2	28,5	25,0	36,2	28,5	25,0	36,2	28,5	25,0	25,0				
PN9220E	0,2-1,0	6,0	31,3	4,8	19,8	13,8		7,4	9,5		4,4	6,5		2,3	4,2	4,2		0,8	4,2		0,8			0,8	0,8				
PN9220E	0,4-1,2	6,0	91,4	64,9	25,0	47,7	32,7	25,0	36,2	24,4	25,0	28,1	18,6	24,0	21,7	21,7	14,0	18,4	21,7	14,0	18,4	21,7	14,0	18,4	18,4				
PN9226E	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	93,0	83,5	25,0	74,4	74,4	66,7	25,0	74,4	66,7	25,0	74,4	66,7	25,0	25,0				
PN9223E	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	25,0				
PN9320E	0,2-1,0	4,0	89,6	63,1	25,0	46,7	31,8	25,0	35,4	23,6	25,0	27,5	17,9	23,3	21,2	21,2	13,5	17,9	21,2	13,5	17,9	21,2	13,5	17,9	17,9				
PN9320E	0,4-1,2	4,0	103,4	103,4	25,0	103,4	98,4	25,0	88,1	76,3	25,0	70,1	60,6	25,0	55,8	55,8	48,1	25,0	55,8	48,1	25,0	55,8	48,1	25,0	25,0				

Actuador	Gaiola standard (S)																			
	Tipo de gaiola		DN15-25 (½"-1")																	
	Gama das molas bar	Tamanho válvula	0,01-0,07 (0,012-0,081)						0,1-0,2 (0,12-0,23)						0,5 (0,58)					
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9120R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9126R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9123R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9226R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9223R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,2-1,0	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,4-1,2	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0

Actuador	Gaiola standard (S)																			
	Tipo de gaiola		DN15-25 (½"-1")																	
	Gama das molas bar	Tamanho válvula	4,0 (4,6)						4,9-6,3 (5,7-7,3)						7,2 (8,3)					
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	102,9	25,0
PN9120R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	97,9	25,0
PN9126R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	78,1	25,0
PN9123R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	36,2	25,0
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9226R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9223R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,2-1,0	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,4-1,2	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Com sede em metal (T & S)
 - Spira-trol
 - DN32 - 50 (1¼" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola		Gaiola standard (S)																																	
		Tamanho válvula		DN32-50 (1¼"-2")																																	
		4,0 (4,6)						6,3 (7,3)						10 (12)						16 (18)						17,5 - 18 (20,2-21)						25 (29)					
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D									
		Kvs (Cv)	Pressão Máxima (bar g)	6,0	7,9																																
PN9120E	0,4-1,2		6,0																																		
PN9120E	1,0-2,0		6,0	57,2	31,5	25,0	30,3	15,4	23,8	17,4	7,8	13,2	13,5	5,6	10,1	9,5	3,4	6,9																			
PN9123E	2,0-4,0		6,0	103,4	103,4	25,0	78,0	63,1	25,0	47,9	38,4	25,0	38,8	30,9	25,0	29,1	23,0	25,0																			
PN9220E	0,2-1,0		6,0	33,2	7,6	22,1	16,3	1,4	9,9	8,5		4,3	6,2		2,7	3,8		1,2																			
PN9220E	0,4-1,2		6,0	91,4	65,7	25,0	50,2	35,2	25,0	30,1	20,6	25,0	24,1	16,2	20,6	17,7	11,6	15,0																			
PN9226E	1,0-2,0		6,0	103,4	103,4	25,0	103,4	103,4	25,0	95,0	85,5	25,0	77,7	69,8	25,0	59,2	53,1	25,0																			
PN9223E	2,0-4,0		6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0																			
PN9320E	0,2-1,0		4,0	89,7	64,0	25,0	49,2	34,3	25,0	29,5	19,9	25,0	23,5	15,6	20,1	17,3	11,1	14,6																			
PN9320E	0,4-1,2		4,0	103,4	103,4	25,0	103,4	100,9	25,0	72,1	62,6	25,0	58,8	50,9	25,0	44,6	38,4	25,0																			

Actuador	Gama das molas bar	Tipo de gaiola		Gaiola standard (S)										Gaiola de baixo ruído (P1)	
		Tamanho válvula		DN32-50 (1½"-2")											
		Kvs (Cv)	Pressão Máxima (bar g)	31-36 (36-42)			46-50 (53-58)			Todos os Kvs					
				N-P	H	D	N-P	H	D	N-P	H	D			
PN9120E	1,0-2,0	6,0	2,3		1,2	1,0				1,0					
PN9123E	2,0-4,0	6,0	10,8	8,1	9,6	7,0	5,1	6,2	7,0	5,1	6,2	7,0	5,1	6,2	
PN9220E	0,4-1,2	6,0	5,8	3,2	4,7	3,5	1,6	2,7	3,5	1,6	2,7	3,5	1,6	2,7	
PN9226E	1,0-2,0	6,0	23,8	21,2	22,7	16,3	14,4	15,5	16,3	14,4	15,5	16,3	14,4	15,5	
PN9223E	2,0-4,0	6,0	53,8	51,2	25,0	37,7	35,8	16,0	37,7	35,8	16,0	37,7	35,8	25,0	
PN9320E	0,2-1,0	4,0	5,7	3,0	4,5	3,4	1,5	2,5	3,4	1,5	2,5	3,4	1,5	2,5	
PN9320E	0,4-1,2	4,0	17,5	14,8	16,3	11,8	9,9	11,0	11,8	9,9	11,0	11,8	9,9	11,0	

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Com sede em metal (T & S)
 - Spira-trol
 - DN32 - 50 (1 1/4" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Gaiola standard (S)																			
		Tipo de gaiola		DN32-50 (1 1/4"-2")																	
		Tamanho válvula		4,0 (4,6)						6,3 (7,3)						10 (12)					
		Kvs (Cv)	Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9120R	0,4-1,2	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9126R	1,0-2,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9123R	2,0-4,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,2-1,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,4-1,2	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9226R	1,0-2,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9223R	2,0-4,0	6,0		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,2-1,0	2,7		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,4-1,2	2,7		103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0

Actuador	Gama das molas bar	Tipo de gaiola		Gaiola de baixo ruído (P1)																	
		Tamanho válvula		DN32-50 (1 1/4"-2")																	
		Kvs (Cv)		31-36 (36-42)						46-50 (53-58)						Todos os Kvs					
		Pressão Máxima (bar g)		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0		36,2	33,5	25,0	25,1	23,2	24,3	25,1	23,2	24,3	25,1	23,2	24,3	25,1	23,2	24,3	25,1	23,2	24,3
PN9120R	0,4-1,2	6,0		34,5	31,8	25,0	23,9	22,0	23,1	23,9	22,0	23,1	23,9	22,0	23,1	23,9	22,0	23,1	23,9	22,0	23,1
PN9126R	1,0-2,0	6,0		27,7	25,1	25,0	19,1	17,2	18,3	19,1	17,2	18,3	19,1	17,2	18,3	19,1	17,2	18,3	19,1	17,2	18,3
PN9123R	2,0-4,0	6,0		10,8	8,1	9,6	7,0	5,1	6,2	7,0	5,1	6,2	7,0	5,1	6,2	7,0	5,1	6,2	7,0	5,1	6,2
PN9220R	0,2-1,0	6,0		103,4	103,4	25,0	101,8	99,9	25,0	101,8	99,9	25,0	101,8	99,9	25,0	101,8	99,9	25,0	101,8	99,9	25,0
PN9220R	0,4-1,2	6,0		103,4	103,4	25,0	97,5	95,7	25,0	97,5	95,7	25,0	97,5	95,7	25,0	97,5	95,7	25,0	97,5	95,7	25,0
PN9226R	1,0-2,0	6,0		103,4	103,4	25,0	80,4	78,6	25,0	80,4	78,6	25,0	80,4	78,6	25,0	80,4	78,6	25,0	80,4	78,6	25,0
PN9223R	2,0-4,0	6,0		53,8	51,2	25,0	37,7	35,8	25,0	37,7	35,8	25,0	37,7	35,8	25,0	37,7	35,8	25,0	37,7	35,8	25,0
PN9320R	0,2-1,0	2,7		94,3	91,6	25,0	66,5	64,7	25,0	66,5	64,7	25,0	66,5	64,7	25,0	66,5	64,7	25,0	66,5	64,7	25,0
PN9320R	0,4-1,2	2,7		82,5	79,8	25,0	58,1	56,2	25,0	58,1	56,2	25,0	58,1	56,2	25,0	58,1	56,2	25,0	58,1	56,2	25,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN65-100 (2½"-4")																	
		K vs (Cv)	16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)			160-180 (185-208)		
			P	H	D	N-P	H	D	P	H	D	P	H	D	P	H	D	P	H	D
PN9230E	0,2-1,0	6,0	2,8		1,2															
PN9230E	0,4-1,2	6,0	16,6	6,3	15,0	5,4	0,9	4,7	3,2		2,7	0,9								
PN9236E	1,0-2,0	6,0	58,2	47,8	25,0	23,4	18,9	22,7	16,0	12,8	15,5	8,2	6,4	7,9	4,7	3,5	4,5	2,5	1,8	2,4
PN9233E	2,0-4,0	6,0	103,4	103,4	16,0	53,4	48,9	25,0	37,4	34,2	25,0	20,2	18,4	19,9	12,4	11,2	6,5	7,3	6,6	7,2
PN9330E	0,2-1,0	4,0	16,2	5,9	14,6	5,2	0,7	4,5	3,0		2,5	0,9		0,6						
PN9330E	0,4-1,2	4,0	43,5	33,2	25,0	17,0	12,5	16,3	11,5	8,3	11,0	5,6	3,8	5,3	31,0	1,9	2,9	1,5	0,7	1,4
PN9336E	1,0-2,0	4,0	103,4	103,4	25,0	52,5	48,0	25,0	36,7	33,5	25,0	19,8	18,0	19,5	12,2	11,0	12,2	7,1	6,4	7,0
PN9337E	2,5-3,5	4,0	103,4	103,4	25,0	103,4	103,4	25,0	99,9	96,7	25,0	55,4	53,6	25,0	34,9	33,8	25,0	21,3	20,6	21,2

Actuador	Mola gama bar	Tipo de gaiola	Gaiola de baixo ruído (P1)							
		Tamanho válvula	DN65-100 (2½" 4")				DN100 (4")			
		Kvs (Cv)	Todos os Kvs				Todos os Kvs			
		Pressão Máxima (bar g)	P	H	D	P	H	D		
PN9230E	0,2-1,0	6,0								
PN9230E	0,4-1,2	6,0								
PN9236E	1,0-2,0	6,0	4,7	3,5	4,5	2,5	1,8	2,4		
PN9233E	2,0-4,0	6,0	12,4	11,2	12,2	7,3	6,6	7,2		
PN9330E	0,2-1,0	4,0								
PN9330E	0,4-1,2	4,0	3,1	1,9	2,9	1,5	0,7	1,4		
PN9336E	1,0-2,0	4,0	12,2	11,0	12,0	7,1	6,4	7		
PN9337E	2,5-3,5	4,0	34,9	33,8	25,0	21,3	20,6	21,2		

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN65-100 (2½"-4")																	
		K vs (Cv)	16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)			160-180 (185-208)		
			P	H	D	N-P	H	D	P	H	D	P	H	D	P	H	D	P	H	D
PN9230R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	101,5	98,3	25,0	56,3	54,5	25,0	35,5	34,3	25,0	21,7	20,9	21,6
PN9230R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	97,2	94,0	25,0	53,9	52,1	25,0	33,9	32,8	25,0	20,7	20,0	20,6
PN9236R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	80,1	76,9	25,0	44,2	42,4	25,0	27,8	26,6	25,0	16,9	16,2	16,8
PN9233R	2,0-4,0	6,0	103,4	103,4	25,0	53,4	48,9	25,0	37,4	34,2	25,0	20,2	18,4	19,9	12,4	11,2	12,2	7,3	6,6	7,2
PN9330R	0,2-1,0	2,7	103,4	103,4	25,0	93,8	89,3	25,0	66,2	63,0	25,0	36,4	34,6	25,0	22,8	21,6	22,6	13,8	13,0	13,6
PN9330R	0,4-1,2	2,7	103,4	103,4	25,0	82,0	77,5	25,0	57,8	54,6	25,0	31,7	29,8	25,0	19,7	18,6	19,6	11,9	11,1	11,7
PN9336R	1,0-2,0	2,7	84,5	74,1	25,0	34,8	30,3	25,0	24,1	20,9	23,6	12,7	10,9	12,4	7,6	6,5	7,4	4,3	3,6	4,2

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola de baixo ruído (P1)									
			DN65-80 (2½"-3")		DN100		Todos os Kvs					
			Todos os Kvs		Todos os Kvs		Todos os Kvs					
			P	H	D	P	H	D	P	H	D	D
PN9230R	0,2-1,0		35,5	34,3	25,0	21,7	20,9	21,6				
PN9230R	0,4-1,2		33,9	32,8	25,0	20,7	20,0	20,6				
PN9236R	1,0-2,0		27,8	26,6	25,0	16,9	16,2	16,8				
PN9233R	2,0-4,0		12,4	11,2	12,2	7,3	6,6	7,2				
PN9330R	0,2-1,0	2,7	22,8	21,6	22,6	13,8	13,0	13,6				
PN9330R	0,4-1,2	2,7	19,7	18,6	19,6	11,9	11,1	11,7				
PN9336R	1,0-2,0	2,7	7,6	6,5	7,4	4,3	3,6	4,2				

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede resiliente (P e Steam-Tight)
 - Spira-trol
 - DN15 - 25 (1/2" - 1")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																							
		Tamanho válvula	DN15-25 (½"-1")																							
		Kvs (Cv)	0.01-0.07 (0.012-0.081)				0.1-0.2 (0.12-0.23)				0.5 (0.58)				1.0 (1.2)				1.6 (1.8)				2.5 (2.9)			
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
		6.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
PN9126E	1.0-2.0	6.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
PN9123E	1.0-2.0	6.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
PN9220E	0.2-1.0	6.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
PN9220E	0.4-1.2	6.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	
PN9320E	0.2-1.0	4.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	

Gaiola standard (S)			DN15-25 (1/2"-1")																							
Tipo de gaiola																										
Tamanho válvula																										
Actuador	Gama das molas bar	Kvs (Cv)	4,0 (4,6)			4,9-6,3 (5,7-7,3)			7,2 (8,3)			10 (12)			11 (12,7)			2,5-4,6-3-10 (2,9-4,6-7,3-12)								
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	B	D		
		6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	17,6	19,0	19,0	19,0	13,8	19,0	19,0	18,6	10,9	15,3	18,6	10,9				15,3	
		6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	16,0	19,0	19,0	19,0	19,0	19,0	19,0	4,7			19,0	
		6,0	19,0	18,1	19,0	19,0	19,0	8,9	17,4	18,3	6,6	13,2	14,5	4,9	10,3	11,4	3,6	8,0	11,4	3,6					8,0	
		6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0			19,0		
		4,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0			19,0		

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede resiliente (P e Steam-Tight)
 - Spira-trol
 - DN32 - 50 (1¼" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Gaiola standard (S)																	
		Tipo de gaiola		DN32-50 (1¼"-2")															
		Tamanho válvula		4,0 (4,6)				6,3 (7,3)				10 (12)				16 (18)			
		Kvs (Cv)	Máximo pressão (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	25 (29)
PN9126E	1,0-2,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9123E	2,0-4,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9220E	0,2-1,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9220E	0,4-1,2	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9226E	1,0-2,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9320E	0,2-1,0	4,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9320E	0,4-1,2	4,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

Actuador	Gama das molas bar	Gaiola de baixo ruído (P1-A1-P2-A2)																	
		Tipo de gaiola		Gaiola standard (S)															
		Tamanho válvula		DN32-50 (1¼"-2")															
		Kvs (Cv)	Máximo pressão (bar g)	31-36 (36-42))				46-50 (53-58)				Todos os Kvs							
PN9126E	1,0-2,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9123E	2,0-4,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9220E	0,2-1,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9220E	0,4-1,2	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9226E	1,0-2,0	6,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9320E	0,2-1,0	4,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
PN9320E	0,4-1,2	4,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

- Pressões diferenciais máximas (bar) para o fecho de classe VI

- Com sede resiliente (P e Steam-Tight)

- Spira-trol

- DN65 - 100 (2½" - 4")

- Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN65-100 (2½"-4")																	
			16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)			160-180 (185-208)		
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	

Actuador	Gama das molas bar	Gaiola de baixo ruído (P1-A1-P2-A2)									
		DN65-80 (2½"-3")					DN100 (4")				
		Todos os Kvs					Todos os Kvs				
		N-P	H	D	N-P	H	D	N-P	H	D	N-P
PN9230E	0,2-1,0										
PN9230E	0,4-1,2	1,7	0,5	1,5	0,9		0,8				
PN9236E	1,0-2,0	6,3	5,1	6,1	3,7	3,0	3,6				
PN9233E	2,0-4,0	14,0	12,8	5,0	8,5	7,8	8,4				
PN9330E	0,2-1,0	1,6	0,5	1,4	0,8		0,7				
PN9330E	0,4-1,2	4,7	3,5	4,5	2,7	2,0	2,6				
PN9336E	1,0-2,0	13,8	12,6	13,6	8,4	7,7	8,3				
PN9337E	2,5-3,5				19,0	19,0	19,0				

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede em PTFE (G)
 Spira-trol
 - DN15 - 25 (1/2" - 1")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Tamanho válvula	DN15-25 (1/2"-1")																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Kvs (Cv)	0.01-0.07 (0.012-0.081)						0.1-0.2 (0.12-0.23)						0.5 (0.58)						1.0 (1.2)						1.6 (1.8)						2.5 (2.9)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
PN9120E	0.2-1.0	6.0	4.0				4.0						4.0				4.0						4.0				4.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													</

Actuador		Gama das molas bar	Tipo de gaiola		Gaiola standard (S)																		Gaiola de baixo ruído (P1)		
			DN15-25 (1/2"-1")																						
			Tamanho válvula		4,0 (4,6)		4,9-6,3 (5,7-7,3)			7,2 (8,3)			10 (12)			11 (12,7)			2,5-4-6,3-10 (2,9-4,6-7,3-12)						
		Kvs (Cv)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D		
		Pressão Máxima (bar g)	4,0			3,3			2,5			1,9			1,5			1,5			3,1			3,1	
PN9120E		0,2-1,0	6,0	4,0					4,0			4,0			4,0			4,0			4,0			4,0	
PN9120E		0,4-1,2	6,0	4,0					4,0			4,0			4,0			4,0			4,0			4,0	
PN9126E		1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9123E		2,0-4,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9220E		0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9220E		0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede em PTFE (G)
 - Spira-trol
 - DN15 - 25 (1/2" - 1")
 - Fluxo sob

Actuador		Gama das molas bar	Gaiola standard (S)																							
			DN15-25 (1/2"-1")																							
			Tipo de gaiola		Tamanho válvula																					
Kvs (Cv)		0,01+0.07 (0.012-0.081)			0.1-0.2 (0.12-0.23)			0,5 (0.58)			1,0 (1.2)			1,6 (1.8)			2,5 (2.9)									
Máximo pressão (bar g)		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D				
PN9120R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0				
PN9120R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0				
PN9126R	1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0				

Actuador		Gama das molas bar	Gaiola standard (S)																								Gaiola de baixo ruído (P1)		
			DN15-25 (1/2"-1")																										
			Tipo de gaiola		Tamanho válvula																								
Kvs (Cv)		4,0 (4.6)			4.9-6.3 (5.7-7.3)			7,2 (8.3)			10 (12)			11 (12.7)			2.5-4.6-3-10 (2.9-4.6-7.3-12)												
Máximo pressão (bar g)		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D							
PN9120R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0							
PN9120R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0							
PN9126R	1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0							

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede em PTFE (G)
 - Spira-trol
 - DN32 - 50 (1¼" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																			
		Tamanho válvula	DN32-50 (1½"-2")																			
		Kvs (Cv)	4,0 (4,6)			6,3 (7,3)			10 (12)			16 (18)			17.5 - 18 (20.2-21)			25 (29)				
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D		
PN9120E	0.2-1.0	6.0	4.0			3.3			1.9				1.5				1.1			0.4		
PN9120E	0.4-1.2	6.0	4.0		4.0	4.0			4.0				4.0			4.0	4.0		2.3	2.5		1.1
PN9126E	1.0-2.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PN9123E	2.0-4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PN9220E	0.2-1.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0
PN9220E	0.4-1.2	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PN9226E	1.0-2.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PN9223E	2.0-4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)									
			DN32-50 (1¼"-2")									
			31-36 (36-42)			46-50 (53-58)			Todos os Kvs			Gaiola de baixo ruído (P1)
			N-P	H	D	N-P	H	D	N-P	H	D	
PN9120E	0,2-1,0		0,3									
PN9120E	0,4-1,2		2,0		0,8	1,3		0,5	1,3		0,5	
PN9126E	1,0-2,0		4,0	4,0	4,0	4,0	3,1	4,0	4,0	3,1	4,0	
PN9123E	2,0-4,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9220E	0,2-1,0		4,0	1,9	3,4	3,2	1,3	2,4	3,2	1,3	2,4	
PN9220E	0,4-1,2		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9226E	1,0-2,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9223E	2,0-4,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	

PN9000R

- Pressões diferenciais máximas (bar) para o fecho de classe VI
- Com sede em PTFE (G)
- Spira-trol
- DN32 - 50 (1¼" - 2")
- Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN32-50 (1 1/4"-2")																	
		Kvs (Cv)	4,0 (4,6)			6,3 (7,3)			10 (12)			16 (18)			17,5 - 18 (20,2-21)			25 (29)		
		Máximo pressão (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9120R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9126R	1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9123R	2,0-4,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9220R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9220R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)												Gaiola de baixo ruído (P1)			
		Tamanho válvula	DN32-50 (1½"-2")															
			31-36 (36-42)						46-50 (53-58)						Todos os Kvs			
		Kvs (Cv)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D				
		Máximo pressão (bar g)																
PN9120R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9120R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9126R	1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9123R	2,0-4,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9220R	0,2-1,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9220R	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

- Pressões diferenciais máximas (bar) para o fecho de classe VI
 - Com sede em PTFE (G)
 - Spira-trol
 - DN65 - 100 (2½" - 4")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN65-100 (2½-4")																	
		Kvs (Cv)	16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)			160-180 (185-208)		
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9230E	0,2-1,0	6,0	4,0		4,0	3,4	4,0	2,9		4,0	2,4	1,5		1,3	0,9		0,8	0,5		0,4
PN9230E	0,4-1,2	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	3,9	2,1	3,7	2,5	1,3	2,3	1,5	0,8	1,4
PN9236E	1,0-2,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	3,7	4,3
PN9233E	2,0-4,0	6,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9330E	0,2-1,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	3,8	4,0	3,9	2,1	3,6	2,4	1,3	3,6	1,5	0,7	1,4
PN9330E	0,4-1,2	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	3,4	2,6	3,2
PN9336E	1,0-2,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9337E	2,5-3,5	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola de baixo ruído (P1)									
			DN65-80 (2½"-3")					DN100 (4")				
			Todos os Kvs					Todos os Kvs				
			N-P	H	D	N-P	H	D	N-P	H	D	D
PN9230E	0,2-1,0	Kvs (Cv)	0,9		0,8	0,5		0,4	0,5		0,4	
PN9230E	0,4-1,2	Máximo pressão (bar g)	2,5	1,3	2,3	1,5	0,8	1,4	1,5	0,8	1,4	
PN9236E	1,0-2,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9233E	2,0-4,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9330E	0,2-1,0		2,4	1,3	3,6	1,5	0,7	1,4	1,5	0,7	1,4	
PN9330E	0,4-1,2		4,0	4,3	4,0	3,4	2,6	3,2	3,4	2,6	3,2	
PN9336E	1,0-2,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	
PN9337E	2,5-3,5		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	

PN9000R
- Pressões diferenciais máximas (bar) para o fecho de classe VI
- Com sede em PTFE (G)
- Spira-trol
- DN65 - 100 (2½" - 4")
- Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)														
			DN65-100 (2½"-4")														
			16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)		
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9230R	0,2-1,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9230R	0,4-1,2		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9236R	1,0-2,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9233R	2,0-4,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9330R	0,2-1,0	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9330R	0,4-1,2	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9336R	1,0-2,0	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola de baixo ruído (P1)							
			DN65-80 (2½"-3")		DN100 (4")		Todos os Kvs			
			Todos os Kvs		Todos os Kvs		Todos os Kvs			
			N-P	H	D	N-P	H	D	N-P	D
PN9230R	0,2-1,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9230R	0,4-1,2		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9236R	1,0-2,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9233R	2,0-4,0		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9330R	0,2-1,0	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9330R	0,4-1,2	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
PN9336R	1,0-2,0	2,7	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

[illegible]

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																		Gaiola de baixo ruído (P1-A1)		
		Tamanho válvula	DN15-25 (1/2"-1")																				
		K vs (Cv)	4,0 (4,6)			4,9-6,3 (5,7-7,3)			7,2 (8,3)			10 (12)			11 (12,7)			2,5-4-6,3-10 (2,9-4,6-7,3-12)					
Pressão Máxima (bar g)			N-P	H	D	N-P	D	N-P	H	D	N-P	D	N-P	H	D	N-P	H	D	N-P	H	D		
			6,0	42,7	16,2	25,0	17,8	2,9	11,3	11,6		6,5	7,4	3,2	4,2		0,8	4,2			4,2		0,8
				6,0	103,4	101,1	25,0	65,5	50,6	25,0	49,3	37,5	25,0	28,4	25,0	29,0	21,3	25,0	29,0	21,3	25,0	29,0	21,3
PN9126E	1,0-2,0	6,0	17,9		6,5	3,8		0,6															
PN9123E	2,0-4,0	6,0																					
PN9220E	0,2-1,0	6,0																					
PN9220E	0,4-1,2	6,0	78,1	51,5	25,0	37,7	22,7	25,0	27,3	15,5	25,0	20,1	10,6	14,5	6,8	11,2	14,5	6,8	11,2				
PN9226E	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	95,7	25,0	85,0	75,5	67,2	59,5	25,0	67,2	59,5	25,0	67,2	59,5		
PN9223E	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	103,4	103,4	25,0	103,4	103,4	103,4	103,4	103,4		
PN9320E	0,2-1,0	4,0	76,3	49,8	25,0	36,7	21,8	25,0	26,5	14,7	25,0	19,5	9,9	14,0	6,3	10,7	14,0	6,3	10,7	14,0	6,3		
PN9320E	0,4-1,2	4,0	103,4	103,4	25,0	103,3	88,4	25,0	79,2	67,4	25,0	62,1	52,6	48,6	40,9	25,0	48,6	40,9	25,0	48,6	40,9		

PN9000R
- Pressões diferenciais máximas (bar) para fecho de classe IV
- Face dura (W)
- Spira-trol
- DN15 - 25 (½" - 1")
- Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN15-25 (1/2"-1")																	
		Kvs (Cv)	0,01-0,07 (0,012-0,081)			0,1-0,2 (0,12-0,23)			0,5 (0,58)			1,0 (1,2)			1,6 (1,8)			2,5 (2,9)		
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9120R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9126R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9123R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9226R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																		Gaiola de baixo ruído (P1-A1)		
		Tamanho válvula	DN15-25 (1/2"-1")																				
		Kvs (Cv)	4,0 (4,6)			4,9-6,3 (5,7-7,3)			7,2 (8,3)			10 (12)			11 (12,7)			2,5-4-6,3-10 (2,9-4,6-7,3-12)					
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D			
PN9120R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			
PN9120R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			
PN9126R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			
PN9123R	2,0-4,0	6,0	103,4	101,1	25,0	65,5	50,6	25,0	49,3	37,5	25,0	37,9	28,4	25,0	29,0	21,3	25,0	29,0	21,3	25,0			
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			
PN9226R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0			

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Revestimento duro (W)
 - Spira-trol
 - DN32 - 50 (1 1/4" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																	
		Tamanho válvula	DN32-50 (1½"-2")																	
		Kvs (Cv)	4,0 (4,6)			6,3 (7,3)			10 (12)			16 (18)			17,5 - 18 (20,2-21)			25 (29)		
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	
		Máximo pressão (bar g)																		
PN9126E	1,0-2,0	6,0	40,8	15,1	25,0	17,8	2,9	11,3	7,4		3,2	4,4	1,0	1,5						
PN9123E	2,0-4,0	6,0	103,4	97,2	25,0	65,5	50,6	25,0	37,9	28,4	25,0	29,7	21,8	16,0	21,1	15,0	18,4	8,3	5,0	6,8
PN9220E	0,2-1,0	6,0	16,8		5,7	3,8														
PN9220E	0,4-1,2	6,0	75,0	49,3	25,0	37,7	22,7	25,0	20,1	10,6	16,0	15,0	7,1	11,5	9,7	3,6	7,0	2,1		0,7
PN9226E	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	85,0	75,5	25,0	68,6	60,7	16,0	51,2	45,1	25,0	24,6	21,3	23,2
PN9223E	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	16,0	103,4	103,4	25,0	62,0	58,7	25,0
PN9320E	0,2-1,0	4,0	73,3	47,6	25,0	36,7	21,8	25,0	19,5	9,9	15,3	14,4	6,5	11,0	9,3	3,1	6,6	1,9		0,5
PN9320E	0,4-1,2	4,0	103,4	103,4	25,0	103,3	88,4	25,0	62,1	52,6	25,0	49,7	41,8	16,0	36,6	30,4	25,0	16,7	13,3	15,2

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)												Gaiola de baixo ruído (P1-P2-P3-A1-A2)			
			DN32-50 (1 1/4" - 2")															
			31-36 (36-42)			46-50 (53-58)			Todos os Kvs									
Actuador	Gama das molas bar	Tamanho válvula	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	D
		Kvs (Cv)	Máximo pressão (bar g)															
PN9123E	2,0-4,0	6,0	5,5	2,9	4,4			1,7	2,6	0,7				1,7				
PN9220E	0,2-1,0	6,0																
PN9220E	0,4-1,2	6,0	0,6															
PN9226E	1,0-2,0	6,0	18,6	15,9	17,4	11,9	10,0	11,0	11,9	10,0	11,0			11,0				
PN9223E	2,0-4,0	6,0	48,6	45,9	25,0	33,2	31,4	25,0	33,2	31,4	25,0			25,0				
PN9320E	0,2-1,0	4,0	0,4															
PN9320E	0,4-1,2	4,0	12,2	9,6	11,1	7,3	5,4	6,5	7,3	5,4	6,5			6,5				

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Revestimento duro (W)
 - Spira-trol
 - DN32 - 50 (1 1/4" - 2")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																							
			DN32-50 (1 1/4"-2")																							
			4,0 (4,6)						6,3 (7,3)						10 (12)						16 (18)					
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9120R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9120R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9126R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9123R	2,0-4,0	6,0	103,4	97,2	25,0	103,4	65,5	50,6	103,4	65,5	25,0	103,4	65,5	25,0	103,4	65,5	25,0	103,4	65,5	25,0	103,4	65,5	25,0	103,4	65,5	25,0
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9226R	1,0-2,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9223R	2,0-4,0	6,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,2-1,0	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0
PN9320R	0,4-1,2	2,7	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0	103,4	103,4	25,0

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)												Gaiola de baixo ruído (P1-P2-P3-A1-A2)					
		Tamanho válvula	DN32-50 (1 1/4"-2")																	
		Kvs (Cv)	31-36 (36-42)						46-50 (53-58)						Todos os Kvs					
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D						
PN9120R	0,2-1,0	6,0	30,9	28,3	25,0	20,7	18,8	19,8	20,7	18,8	19,8	20,7	18,8	19,8	20,7	18,8	19,8			
PN9120R	0,4-1,2	6,0	29,2	26,6	25,0	19,5	17,6	18,6	19,5	17,6	18,6	19,5	17,6	18,6	19,5	17,6	18,6			
PN9126R	1,0-2,0	6,0	22,5	19,8	21,3	14,6	12,7	13,8	14,6	12,7	13,8	14,6	12,7	13,8	14,6	12,7	13,8			
PN9123R	2,0-4,0	6,0	5,5	2,9	4,4	2,6	0,7	1,7	2,6	0,7	1,7	2,6	0,7	1,7	2,6	0,7	1,7			
PN9220R	0,2-1,0	6,0	103,4	103,4	25,0	97,4	95,5	25,0	97,4	95,5	25,0	97,4	95,5	25,0	97,4	95,5	25,0			
PN9220R	0,4-1,2	6,0	103,4	103,4	25,0	93,1	91,2	25,0	93,1	91,2	25,0	93,1	91,2	25,0	93,1	91,2	25,0			
PN9226R	1,0-2,0	6,0	103,4	103,4	25	76,0	74,1	25,0	76,0	74,1	25,0	76,0	74,1	25,0	76,0	74,1	25,0			
PN9223R	2,0-4,0	6,0	48,6	45,9	25	33,2	31,4	25,0	33,2	31,4	25,0	33,2	31,4	25,0	33,2	31,4	25,0			
PN9320R	0,2-1,0	2,7	89	86,4	25	62,1	60,2	25,0	62,1	60,2	25,0	62,1	60,2	25,0	62,1	60,2	25,0			
PN9320R	0,4-1,2	2,7	77,2	74,6	25	53,7	51,8	25,0	53,7	51,8	25,0	53,7	51,8	25,0	53,7	51,8	25,0			

PN9000E

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Revestimento duro (W)
 - Spira-trol
 - DN65 - 100 (2½" - 4")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)																				
		Tamanho válvula	DN65-100 (2 1/2-4")																				
		Kvs (Cv)	16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)			160-180 (185-208)					
		Pressão Máxima (bar g)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D			
PN9230E	0,4-1,2	6,0	8,6		7,0																		
PN9236E	1,0-2,0	6,0	50,2	39,8	25,0	18,1	13,6	17,4	11,5	8,3	11,0	4,8	3,0	4,5	2,0	0,9	1,8	0,4					0,3
PN9233E	2,0-4,0	6,0	103,4	103,4	25,0	48,1	43,6	25,0	32,9	29,7	25,0	16,9	15,0	16,6	9,7	8,6	9,5	5,2	4,5	5,1			
PN9330E	0,2-1,0	4,0	8,2		6,6																		
PN9330E	0,4-1,2	4,0	35,5	25,2	25,0	11,8	7,3	11,1	7,0	3,8	6,5	2,3	0,5	2,0	0,4		0,2						
PN9336E	1,0-2,0	4,0	103,4	103,4	25,0	47,2	42,7	25,0	32,3	29,1	15,9	16,5	14,7	16,2	9,5	8,3	9,3	5,0	4,3	4,9			
PN9337E	2,5-3,5	4,0	103,4	103,4	25,0	103,4	103,4	25,0	95,5	92,3	25,0	52,0	50,2	25,0	32,2	31,1	25,0	19,2	18,5	19,1			

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola de baixo ruído (P1-A1-P2-A2-P3)													
			Tamanho válvula	DN65-80 (2½-3")					DN100 (4")							
				Todos os Kvs					Todos os Kvs							
				Kvs (Cv)	N-P	H	D		N-P	H	D					
			Máximo pressão (bar g)													
PN9236E	1,0-2,0		6,0	2,0	0,9	1,8	0,4									0,3
PN9233E	2,0-4,0		6,0	9,7	8,6	9,5	5,2	4,5	5,1							
PN9330E	0,2-1,0		4,0													
PN9330E	0,4-1,2		4,0	0,4		0,2										
PN9336E	1,0-2,0		4,0	9,5	8,3	9,3	5,0	4,3	4,9							
PN9337E	2,5-3,5		4,0	32,2	31,1	25,0	19,2	18,5	19,1							

- Pressões diferenciais máximas (bar) para o fecho de classe IV
 - Revestimento duro (W)
 - Spira-trol
 - DN65 - 100 (2½" - 4")
 - Fluxo sob

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola standard (S)														
			DN65-100 (2½"-4")														
			16 (18)			25 (29)			36 (42)			63-73-90 (73-85-104)			100-117 (116-135)		
			N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D
PN9230R	0,2-1,0		103,4	103,4	25,0	103,4	103,4	25,0	97,1	93,9	25,0	52,9	51,1	25,0	32,8	31,7	25,0
PN9230R	0,4-1,2		103,4	103,4	25,0	103,4	103,4	25,0	92,8	89,6	25,0	50,5	48,7	25,0	31,3	30,1	25,0
PN9236R	1,0-2,0		103,4	103,4	25,0	103,4	103,4	25,0	75,7	72,5	25,0	40,9	39,1	25,0	25,1	24,0	24,9
PN9233R	2,0-4,0		103,4	103,4	25,0	103,4	43,6	25,0	32,9	29,7	25,0	16,9	15,0	16,6	9,7	8,6	9,5
PN9330R	0,2-1,0		103,4	103,4	25,0	88,6	84,1	25,0	61,8	58,6	25,0	33,1	31,3	25,0	20,1	19,0	19,9
PN9330R	0,4-1,2		103,4	103,4	25,0	76,8	72,3	25,0	53,4	50,2	25,0	28,3	26,5	25,0	17,1	15,9	16,9
PN9336R	1,0-2,0		76,5	66,1	25,0	29,5	25,0	25,0	19,7	16,5	19,2	9,4	7,6	9,1	4,9	3,8	4,8

Actuador	Gama das molas bar	Tipo de gaiola	Gaiola de baixo ruído (P1-A1-P2-A2-P3)									
			DN65-80 (2½"-3")		DN100 (4")							
			Todos os Kvs		Todos os Kvs							
			N-P	H	D	N-P	H	D				
PN9230R	0,2-1,0		32,8	31,7	25,0	19,6	18,8	19,4				
PN9230R	0,4-1,2		31,3	30,1	25,0	18,6	17,9	18,5				
PN9236R	1,0-2,0		25,1	24,0	24,9	14,8	14,0	14,7				
PN9233R	2,0-4,0		9,7	8,6	9,5	5,2	4,5	5,1				
PN9330R	0,2-1,0		20,1	19,0	19,9	11,6	10,9	11,5				
PN9330R	0,4-1,2		17,1	15,9	16,9	9,8	9,0	9,6				
PN9336R	1,0-2,0		4,9	3,8	4,8	2,1	1,5	2,1				

Série PN9000 - Guia de selecção

Antes de efectuar a selecção da série PN9000, consulte as páginas 6 a 26 - Dados de dimensionamento

Como usar os dados para dimensionamento:

As tabelas abaixo dão indicação de como dimensionar os PN9000 quando usados em Válvulas de controlo SPIRA-TROL.

Na tabela são indicadas duas condições:

Classe de vedação IV - Tem uma vedação conforme o requerido na BS 5793-4 (IEC 60534-4) classe IV.

Classe de vedação VI - Tem uma vedação conforme o requerido na BS 5793-4 (IEC 60534-4) classe VI.

Para seleccionar o actuador adequado:

- Identificar a coluna que contém a válvula e o material do empanque seleccionado.
- Identificar a condição de pressão máxima de funcionamento, incluindo quaisquer pressões transitórias susceptíveis de ocorrer, na coluna seleccionada.
- Volte a ler o lado esquerdo da tabela para identificar o actuador adequado para a aplicação.

Para condições fora dos valores indicados, consulte a Spirax Sarco.

Tipo	PN = Pulverização com pó de Poliéster (standard)	PN
Série	9 = Série 9000	9
Tamanho do actuador	1 = 100 cm ² 2 = 340 cm ² 3 = 670 cm ²	3
Curso da válvula	2 = 20 mm 3 = 30 mm	3
Gama das molas	0 = 0.2 a 1,0 bar (opcional de 0,4 bar a 1,2 bar) 3 = 2.0 a 4,0 bar 6 = 1.0 a 2,0 bar 7 = 2.5 a 3.5 bar (série PN933_ apenas)	7
Acção da mola	E = Mola estendida R = Mola retraída	E
Tipo forquilha (DN15 - DN50)	Em branco = Spira-trol™ Séries K e L (M34) B = Spira-trol™ Série J (M50)	
Controlo Manual	H = Volante (opcional)	
Parafusos anti-corrosivos	S = Parafusos anti-corrosivos (opcional)	
Velocidade Rápida	F = Versão com maior rapidez de operação (só possível nos PN92 e PN93)	
Diafragma	Em branco = Standard T = Diafragma EPDM de alta temperatura	

Como encomendar / exemplo de selecção:

1 Actuador pneumático Spirax Sarco PN9337E

Sobressalentes

Os únicos sobressalentes disponíveis estão indicados abaixo e são comuns a ambas as versões de mola estendida e mola em retraída

Sobressalentes disponíveis

Conjunto de vedação da haste	17, 18, 30
Conjunto do diafragma	4, 9
Conjunto de indicador de curso	15, 19, 20
Conjunto das molas	5
Conjunto Acoplamento (válvulas Spira-trol™)	10, 13, 14, 26, 27

Como encomendar sobressalentes

Encomende os sobressalentes indicando sempre a descrição da coluna “sobressalentes disponíveis” e o modelo de actuador.

Exemplo: 1 Conjunto de vedação da haste para actuador PN9123E.

