

# Safety Relief Valves Series 226R/HR & 226VR/HVR-MK3



## PRODUCT INFORMATION

**Serving the Gas Industry  
Worldwide**



**SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3**

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## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Introduction, Application, Features, Technical Data

### Introduction

- The Series 226R & 226HR are Low Pressure, Direct Acting, diaphragm operated Relief Valves.
- The Series 226VR & 226HVR MK3 are High Pressure Direct Acting, diaphragm operated Relief Valves.
- Use with confidence on natural and manufactured gases of non-aggressive nature, including Nitrogen, Carbon Dioxide, Propane, Butane etc.

### Application

- A dependable means of protecting regulator downstream systems, storage vessels and other systems against overpressure by relieving the excess gas pressure.
- Designed to provide protection against excessive pressure in systems and vessels.
- Suitable for use as creep relief and as part of a stream discrimination safety system.

### Features

- Light Weight Construction
- Direct-Acting
- Inlet Pressure Test Points
- Installation at any angle
- Optional External Control Line (ECL) on sizes 1¼" and above

SIZE RANGE	
Screwed	Flanged
¾"	-
1"	-
1.1¼"	-
1.1½"	-
2"	DN 50 DN 80
BS21 Rc	PN16:BS EN 1092-2:1997

SERVICE CONDITIONS			
Size	Model	Max. Inlet Pressure	Outlet Pressure Range
¾" & 1"	226R - Mk4	350 mbarg	15 to 300 mbarg
1"	226VR - Mk3 226HVR - Mk3	up to 25 barg up to 25 barg	25 to 550 mbarg 0.5 to 3.5 barg
1¼", 1½" & 2"	226R - Mk3 226HR - Mk3	350 mbarg 500 mbarg	10 to 120 mbarg 25 to 350 mbarg
DN 50	226R - Mk2 226HR - Mk2	350 mbarg 500 mbarg	10 to 120 mbarg 10 to 350 mbarg
DN 80	226R - Mk2 226HR - Mk2	200 mbarg 500 mbarg	10 to 70 mbarg 10 to 215 mbarg

Temperature Range: -20°C to +60°C

### Installation

Any orientation, but moisture or debris must not ingress the vent hole.

Relief pressure must be vented to a safe area.

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

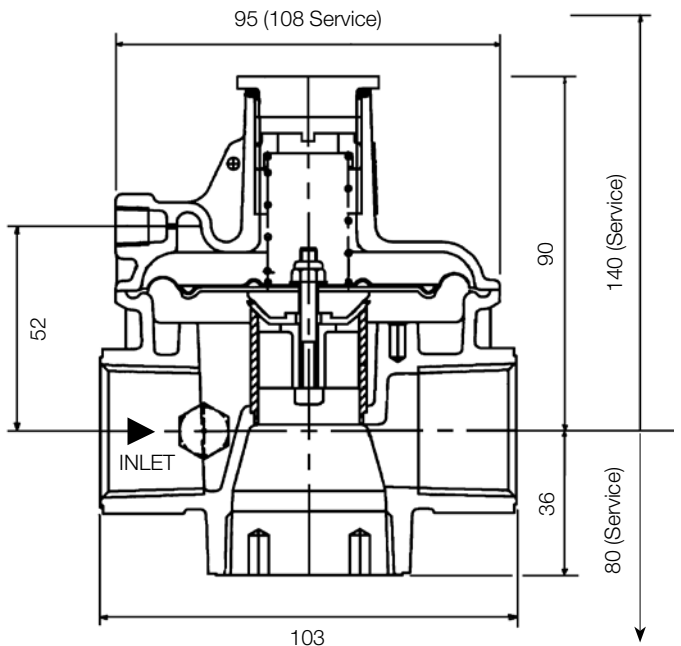
Series 226R Mk4: (3/4" & 1")

SPRING SELECTION			
Spring		Relief Pressure Range	
Number	Colour	Mbar	ins wg
859	Red	15 to 45	6 to 18
861	Brown	35 to 85	14 to 34
1307	Blue	85 to 120	34 to 48
1303	Green	125 to 200	50 to 80
869*	Silver	150 to 300	60 to 120

\* For special applications contact BD-RMG for details

MATERIALS OF CONSTRUCTION	
Component	Material
Body & Casings	Aluminium: BS1490 LM24
Diaphragm & Valve Seat	Nitrile Synthetic Rubber EN 549
Valve Orifice	Brass: BS 1449-CZ121
Diaphragm Plates	Carbon Steel: Zinc Plated BS 1449 & BS 1705
Diaphragm Guide	Acetal
Top Cap, Valve Support & Body Plug	Aluminium: BS 1474-2011
Fasteners	Carbon Steel Plated

### Dimensions & Weights



**Weight:** : 0.63Kg  
 Vent Connection : Rc 1/8  
 Pressure Test Point : Rc 1/8  
 All dimensions in mm

RELIEF CAPACITY				
Inlet Pressure in mbarg	Relief Capacity in smch (SG 0.6)			
	Spring No. 859 Set Point: 30 mbarg	Spring No. 861 Set Point: 50 mbarg	Spring No. 861 Set Point: 85 mbarg	Spring No. 1307 Set Point: 100 mbarg
35	1.5			
40	12.5			
45	34			
50	49			
55	60	2		
60	69	6		
65	76	25		
70	76	48		
75	83	61		
80	89	74		
85	91	83		
90	93	90		
95	95	93	1	
100	99	97	6	
105	101	99	11	
110	103	102	49	4
115	106	104	71	35
120	109	108	87	60
125	111	110	95	79
130	114	112	104	93
135	116	114	108	101
140	118	118	114	107
145	119	119	118	114
150	120	120	122	118

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Series 226R/HR: 1¼" to 3" (DN 80)

SPRING SELECTION						
Series 226 R						
Relief Pressure Range			Spring Number			
mbarg	ins wg	Colour	1¼" & 1½"	2"	DN 50 FL	DN 80 FL
11 to 28	4.5 to 11	Blue	1069	1074	-	-
10 to 22	4 to 8.5	Self	-	-	283	790
20 to 35	8 to 14	Green	-	-	284	791
28 to 60	11 to 24	Black	1071	1076	-	-
30 to 70	12 to 28	Yellow	-	-	285	799
40 to 80	16 to 32	Self	1156	1157	-	-
60 to 120	24 to 48	Orange	1181	1182	-	-
62 to 120	25 to 48	Orange	-	-	497	-

Series 226 HR						
Relief Pressure Range			Spring Number			
mbarg	ins wg	Colour	1¼" & 1½"	2"	DN 50 FL	DN 80 FL
10 to 22	4 to 8.5	Self	-	-	283	790
20 to 35	8 to 14	Green	-	-	284	791
25 to 80	10 to 32	Orange	495	497	-	-
30 to 70	12 to 28	Yellow	-	-	285	799
62 to 120	25 to 48	Orange	-	-	497	775
70 to 170	28 to 68	Blue	835	1183	-	-
115 to 215	46 to 86	Blue	-	-	834	778
160 to 350	64 to 140	Grey	1178	1184	-	-
210 to 350	84 to 140	Grey	-	-	832	-

MATERIALS OF CONSTRUCTION	
Size: 1¼", 1½" & 2"/DN 50	
Body & Casings	Aluminium ISO Al-Si8Cu3Fe
Diaphragm & Valve Seating	Nitrile BS 6505
Valve assembly	Acetal
Diaphragm plates	Carbon steel plated / coated
Fasteners	Carbon steel plated
Size: DN 80	
Body & Casings	Aluminium ISO Al-Si5Cu3
Diaphragm	Nitrile: BS 6505
Valve Seating	Nitrile: BS2492
Diaphragm plates	Carbon steel plated/coated
Fasteners	Carbon steel plated

ORIFICE SIZE	
Orifice	
Unit Size	Orifice Size (mm)
3¼" & 1" sc	25
1¼" & 1½" sc	36
2" sc	51
DN 50 FL	44.5
DN 80 FL	70

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Relief Capacities 226R/HR: 1.¼" to 3" (DN 80)

SERIES 226 R						
Size	Spring Number	Set Point mbarg	Over Pressure % Relief Capacity			
			10%	25%	50%	100%
1.1¼" (Screwed)	1069	10	2	5	53	
		28	6	43	88	
	1071	25	4	8	38	
		50	8	21	185	
	1156	45	2	14	145	
		80	40	167	235	
1.1½" (Screwed)	1069	10	2	8	59	
		28	4	58	123	
	1071	25	3	10	41	
		50	4	24	195	
	1156	45	4	13	145	
		80	42	155	238	
2" (Screwed)	1074	10	4	35	84	
		28	50	155	200	
	1076	25	9	30	120	
		50	16	92	270	
	1157	45	20	109	201	
		80	50	170	300	
DN 50 (Flanged)	283	20	51	123	210	263
	284	30	78	149	248	320
	285	50	85	196	346	413
	497	100	111	283	507	586
	-					
	-					
DN 80 (Flanged)	790	15	85	161	250	401
	791	30	100	222	410	520
	799	47	142	315	530	798
	-					
	-					

Capacities given in sm<sup>3</sup>/hr for Natural Gas (SG 0.6) and based on free discharge to atmosphere through 1 metre of straight equal bore/pipe.

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

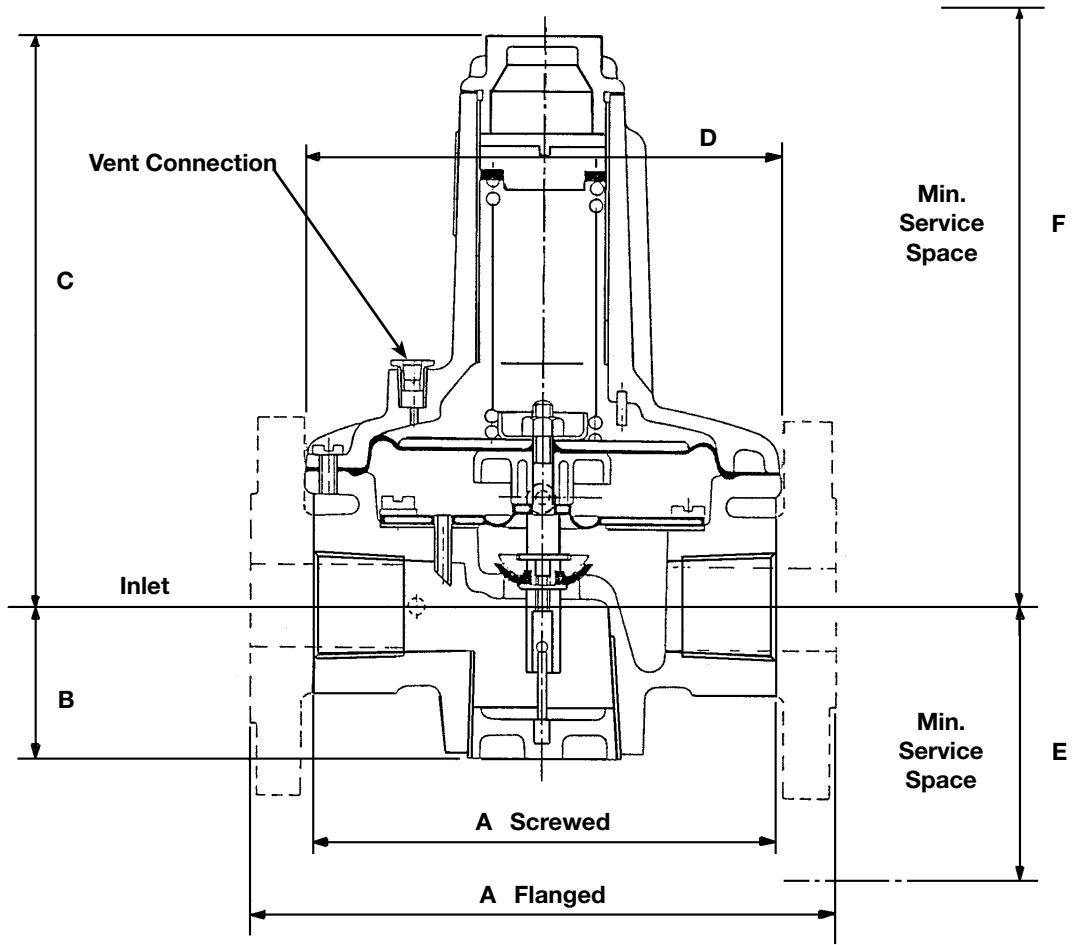
Relief Capacities 226R/HR: 1.¼" to 3" (DN 80)

SERIES 226 HR						
Size	Spring Number	Set Point mbarg	Over Pressure % Relief Capacity			
			10%	25%	50%	100%
<b>1.1¼"</b> (Screwed)	495	25 80	2 32	20 140	90 340	170 400
	835	70 170	33 20	80 150	260 390	370 460
	1178	160 350	16 80	100 300	360 -	460 -
<b>1.1½"</b> (Screwed)	495	25 80	2 32	20 140	90 340	170 400
	835	70 170	33 20	80 150	260 390	370 460
	1178	160 350	16 80	100 300	360 -	460 -
<b>2"</b> (Screwed)	497	25 80	3 75	90 330	200 540	350 650
	1183	70 170	60 180	200 530	420 800	590 940
	1184	160 350	100 160	340 820	680 -	920 -
<b>DN 50</b> (Flanged)	283	15	34	73	93	133
	284	30	59	100	129	210
	285	47	70	126	161	230
	497	75	82	146	192	280
	834	138	103	212	269	312
	832	276	117	243	338	-
<b>DN 80</b> (Flanged)	790	15	85	161	250	401
	791	30	100	222	410	520
	799	47	142	315	530	798
	775	75	247	493	660	1100
	778	138	344	740	947	1495

Capacities given in sm<sup>3</sup>/hr for Natural Gas (SG 0.6) and based on free discharge to atmosphere through 1 metre of straight equal bore/pipe.

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Dimensions & Weights (226R/HR)



Size	Type	A	B	C	D	E	F	Wt. Kg's
1¼"	226R Mk3	164	57	140	171	82	228	1.95
1½"	226R Mk3	164	57	140	171	82	228	1.87
2"	226R Mk3	210	63	175	230	92	305	3.91
1¼"	226 HR Mk3	164	57	203	182	82	302	2.38
1½"	226 HR Mk3	164	57	203	182	82	302	2.30
2"	226 HR Mk3	210	63	266	240	92	362	4.7
DN 50 FL	226 R Mk2	210	58	261	213	110	420	4.87
	226 HR Mk2	210	58	261	213	110	420	5.04
DN 80 FL	226 R Mk2	318	102	384	381	135	600	16.4
	226 HR Mk2	318	102	420	381	135	350	19.1

All Dimensions in mm



## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Series 226VR & HVR Mk3: (1")

### Introduction

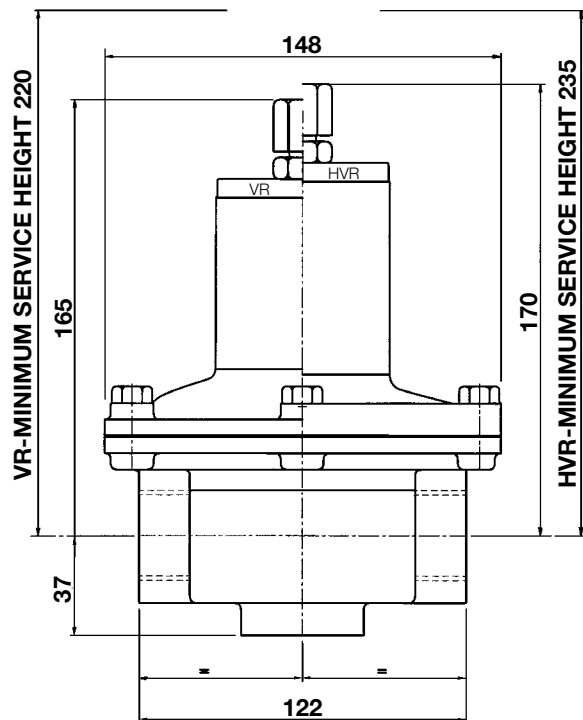
- The Series 226VR & HVR-Mk3 are High Pressure, diaphragm operated, internally impulsed Relief Valves, having external relief pressure spring adjustment.
- Both models are available with 7 or 25 barg inlet Pressure Rating.

SPRING SELECTION			
Series 226 VR-Mk3			
Spring		Relief Pressure Range	
Number	Colour	mbar	ins wg
1072	Red (2.18 dia)	25 to 42	10 to 16.5
1090	Red (2.64 dia)	40 to 60	16 to 24
1091	Yellow	55 to 85	22 to 34
1092	Green	80 to 125	32 to 50
1093	Brown	125 to 210	50 to 80
1094	Blue	200 to 325	80 to 130
1095	Black	320 to 550	128 to 220

Series 226 HVR-Mk3			
Spring		Relief Pressure Range	
Number	Colour	barg	psig
1094	Blue	0.50 to 0.65	7.25 to 9.4
1095	Black	0.60 to 1.0	8.7 to 14.5
1282	Red/Yellow	1.0 to 2.0	14.5 to 29.0
1283	Red/White	2.0 to 3.5	29.0 to 51.7

ORIFICE SIZE	
Orifice Size	Valve Travel
25mm	7mm max

### Dimensions & Weights



**Weights:** 226VR Mk3 5.0Kg's  
226HVR Mk3 5.5Kg's

All dimensions in mm

MATERIALS OF CONSTRUCTION	
Component	Material
Body & Spring Housing	Ductile Iron: to BSEN 1563 Grade EN-GJS-400-18
Diaphragm & Valve Seating	Nitrile:
Valve Guide	Acetal
Diaphragm Plate, Spring Adjuster & Fasteners	Carbon Steel, zinc plated
Seals	Nitrile
Orifice	Brass

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

Relief Capacities: 226VR/HVR-Mk3 (1")

SERIES 226 VR-MK3					
Spring Number	Pressure Setting	Flow at % Over Pressure in SM3/Hr (SG 0.6)			
	mbarg	25%	50%	75%	100%
1072	25	34	45	58	70
	40	48	65	85	95
1090	40	40	81	95	114
	60	61	105	130	150
1091	55	50	88	112	132
	85	60	110	150	165
1092	80	60	92	140	165
	125	65	133	181	215
1093	125	110	160	180	205
	210	140	205	251	280
1094	200	145	200	235	270
	325	190	270	320	370
1095	320	145	240	300	340
	550	260	380	480	575

SERIES 226 HVR-MK3					
Spring Number	Pressure Setting	Flow at % Over Pressure in SM3/Hr (SG 0.6)			
	mbarg	25%	50%	75%	100%
1094	0.50	210	300	380	444
	0.65	220	355	450	519
1095	0.60	210	309	390	470
	1.00	330	450	581	670
1282	1.50	305	470	575	700
	2.00	375	600	790	925
	2.50	350	655	800	920
1283	2.00	325	556	724	870
	2.50	370	600	768	955
	3.00	380	705	948	1196
	3.50	400	750	1075	1328

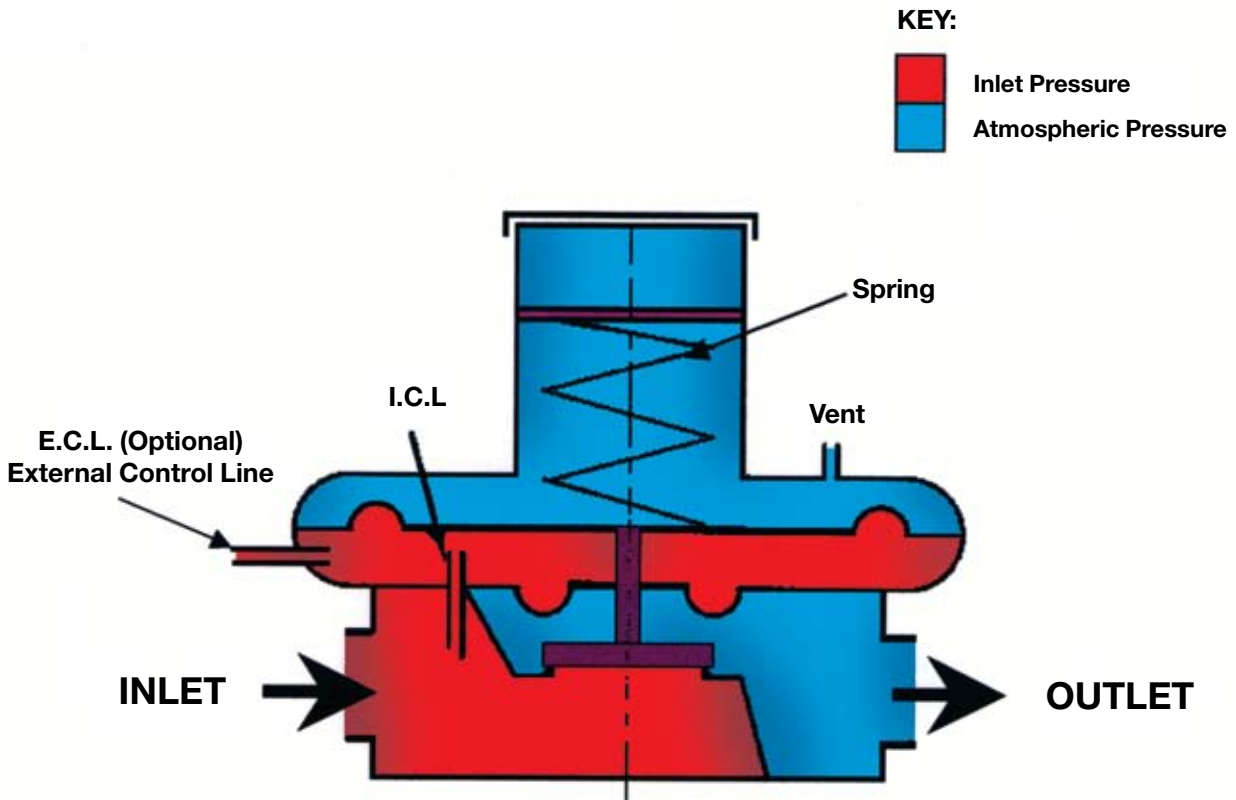
All above values are for relief valves having 1" connections with 1 metre of equal diameter pipe fitted to outlet.

The tabulated values are obtained from test results with an expected accuracy  $\pm 20\%$

Note: back pressure from use of extended pipe runs with elbows and bends will reduce the stated flow values.

## SAFETY RELIEF VALVES SERIES 226R/HR & 226VR/HVR-MK3

### Sectional Arrangement



Note: ECL only available on sizes 1¼" and above

SPARES KITS		
Size	Type	Spares Kit Reference
3¼" & 1" sc	226R MK4 Relief Valve	200/WS-024
3¼" & 1" sc	226VR MK3 Relief Valve	201/WS-020
3¼" & 1" sc	226HVR MK3 Relief Valve	201/WS-021
1¼" & 1½" sc	226R MK3 Relief Valve	201/WS-001
2" sc	226R MK3 Relief Valve	202/WS-001
1¼" & 1½" sc	226HR MK3 Relief Valve	201/WS-004
2" sc	226HR MK3 Relief Valve	202/WS-002
DN 50 FL	226R MK2 Relief Valve	200/WS-004
DN 50 FL	226HR MK2 Relief Valve	200/WS-015
3" sc & DN 80 FL	226R MK2 Relief Valve	200/WS-005
3" sc & DN 80 FL	226HR MK2 Relief Valve	200/WS-006

### **For More Information**

To learn more about RMG's advanced gas solutions, contact your RMG account manager or visit [www.rmg.com](http://www.rmg.com)

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