

SPRING HANGERS

Fig. 82, Fig. B-268, Fig. 98, Triple Spring, and Quadruple Spring Fig. C-82, Fig. C-268, Fig. C-98, Triple-CR, and Quadruple-CR Spring (Corrosion Resistant)

Design features:

- Precompression.
Precompressing the spring into the hanger casing provides the following advantages:
 - (1) Saves up to 50% in headroom by reducing the length of the hanger.
 - (2) Reduces the installed height of the overall hanger assembly.
 - (3) Prevents the spring supporting force from exceeding the normal safe limits of variations.
 - (4) Saves valuable erection time because spring is precompressed close to $\frac{1}{2}$ " of the working range.
- Calibration: all Anvil Variable Spring Hangers and supports are calibrated for accurate loading conditions.
- Load indicator is clearly seen in the slot, simplifying reading of the scale plate. Load is read from bottom of indicator.
- Cold set at the factory upon request.
- Spring and casing are fabricated of steel and are rugged and compact.
- Piston cap serves as a centering device or guide maintaining spring alignment.
- Casing protects the spring from damage and weather conditions.

Standard Finish: Painted with semi-gloss primer.

Corrosion Resistant: Anvil offers corrosion-resistant and weather-resistant Variable Spring Hangers to fill vital needs in the chemical and refinery industries as well as in modern outdoor power plant construction. For protection against severe weather conditions or moderate corrosive conditions, the parts of the hanger are galvanized per ASTM A-153, except the spring which has a protective coating and the load column for Type F which is electro-galvanized.

Advantages of a Protective Coating:

- Protects from a wide range of corrosives.
- Does not affect the flex life of the spring.
- Recommended for ambient temperatures up to 200° F

Travel stop: The functional design of the pre-compressed variable spring hanger permits the incorporation of a two-piece travel stop that locks the hanger spring against upward or downward movement for temporary conditions of underload or overload. The complete travel stop, the up travel stop only for cold set purposes or the down travel stop only which may be employed during erection, hydrostatic test (Anvil permits a hydrostatic test load of 2 times the normal operating load for the spring hanger) or chemical cleanout will be furnished only when specified. The travel stop is painted red and is installed at the factory with a caution tag attached calling attention that the device must be removed before the pipe line is put in service. Permanently attached travel stops available upon request.

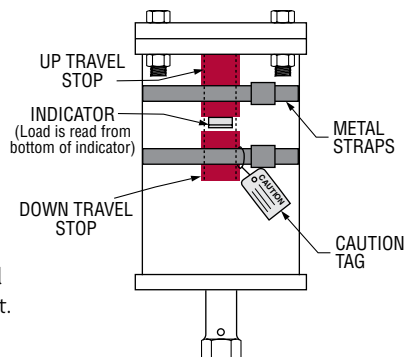


Figure B-268



Figure 82



Approvals: WW-H-171E (Types 51, 56 and 57), ANSI/MSS SP-69 and MSS SP-58 (Types 51, 52 and 53).

Specifications: Anvil Variable Spring Hangers are welded in strict accordance with ASME Section IX.

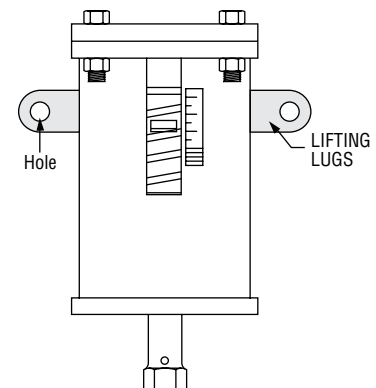
Size Range: The Anvil Variable Spring Hanger in five series and seven types is offered in twenty-three sizes (Fig. B-268 only is offered in twenty-five sizes). The hanger can be furnished to take loads 10 lbs. to 50,000 lbs.

Ordering:

- (1) Size
- (2) Type
- (3) Figure number
- (4) Product name
- (5) Desired supporting force in operating position
- (6) Calculated amount and direction of pipe movement from installed to operating position.
- (7) Customer's identification number (if any)
- (8) When ordering Type F spring specify if roller or guided load column is to be furnished.
- (9) When ordering Type G, specify total load and load per spring plus center to center rod dimensions.
- (10) If required, specify with travel stop
- (11) When ordering corrosion resistant, specify C-268, C-82, C-98, Triple-CR, or Quadruple-CR "completely galvanized except coated spring coil".

Note:

To help alleviate the problem of lifting large size spring hangers into position for installation, this product is available with lifting lugs (if required) on sizes weighing one hundred pounds or more.

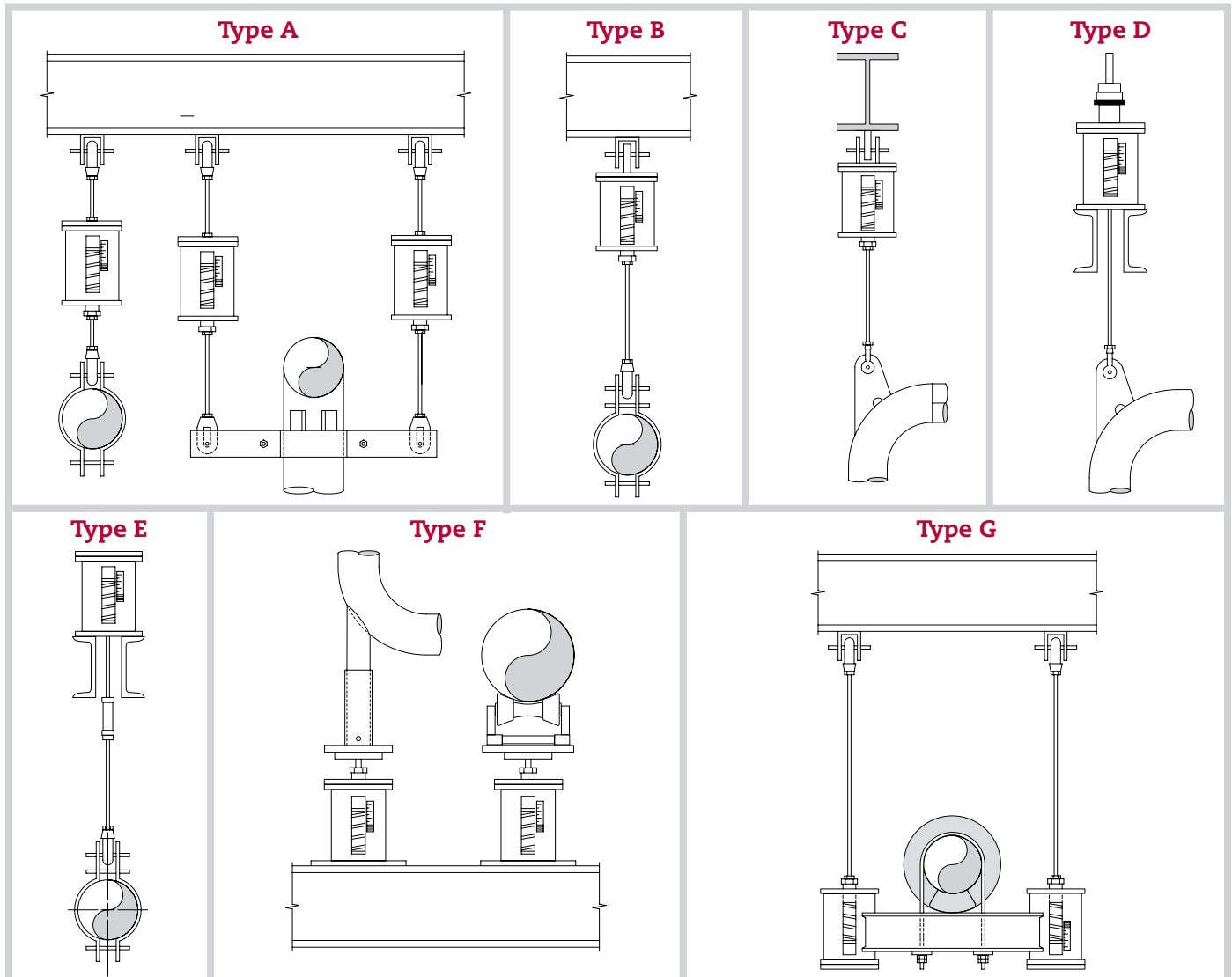


**Fig. 82, Fig. B-268, Fig. 98, Triple Spring, and Quadruple Spring (cont.)
Fig. C-82, Fig. C-268, Fig. C-98, Triple-CR, and Quadruple-CR Spring (Corrosion Resistant)**

How to Determine Type: The type of variable spring hanger to be used depends upon the physical characteristics required by the suspension problem (e.g., amount of head room, whether pipe is to be supported above or below the spring, etc.).

Consideration should be given to the seven standard types offered (see illustration below). Special variable spring hangers can be fabricated for unusual conditions.

Spring Hanger Types – Typical Applications



Recommended Service: Pipe hangers located at points that are subject to vertical thermal movement and for which a constant support hanger is not required (see “recommended service” for constant support hanger, page 193). Type D & E spring hangers may accommodate less than 4° of rod swing depending on size, figure number, and application.

Installation: Securely attach hanger to the building. Attach lower hanger rod and turn the load coupling until the load indicator is positioned at the desired setting indicated on the load scale plate.

Adjustment of Hanger: Once installed in the line; the hanger should be adjusted until the load indicator moves to the white button marked “C” (cold position). On inspection of the system, after a reasonable period of operation, the load indicator should be at the red button marked “H” (hot position). If it is not, the hanger should be readjusted to the hot position. No other adjustment is necessary.

How to Determine Series: Complete sizing information is given on the hanger selection chart on pages 174 and 175. The sizing information is applicable to hangers of all series. As noted on the hanger selection charts that the total spring deflection in the casing leaves a reserve (overtravel) above and below the recommended working load range.

SPRING HANGERS

Spring Hanger Size and Series Selection

How to use hanger selection table: In order to choose a proper size hanger, it is necessary to know the actual load which the spring is to support and the amount and direction of the pipe line movement from the cold to the hot position.

Find the actual load of the pipe in the load table. As it is desirable to support the actual weight of the pipe when the line is hot, the actual load is the hot load. To determine the cold load, read the spring scale, up or down, for the amount of expected movement.

The chart must be read opposite from the direction of the pipe's movement. The load arrived at is the cold load.

If the cold load falls outside of the working load range of the hanger selected, relocate the actual or hot load in the adjacent column and find the cold load. When the hot and cold loads are both within the working range of a hanger, the size number of that hanger will be found at the top of the column.

LOAD TABLE (LBS) FOR SELECTION OF HANGER SIZE (sizes 10 through 22 on next page)																	
Working Range (in) unshaded Shaded Rows Show Overtravel					Hanger size												
					B-268 Only		Fig. 82, Fig. B-268, Fig. 98, Triple & Quadruple Spring										
Figure No.					000	00	0	1	2	3	4	5	6	7	8	9	
Quad.	Triple	98	B-268	82													
2	1½	1	½	¼	7	19	43	63	81	105	141	189	252	336	450	600	
					7	20	44	66	84	109	147	197	263	350	469	625	
					8	22	46	68	88	114	153	206	273	364	488	650	
					9	24	48	71	91	118	159	213	284	378	506	675	
0	0	0	0	0	10	26	50	74	95	123	165	221	294	392	525	700	
					11	28	52	76	98	127	170	228	305	406	544	725	
					12	30	54	79	101	131	176	236	315	420	563	750	
					12	31	56	81	105	136	182	244	326	434	581	775	
2	1½	1	½	¼	14	34	58	84	108	140	188	252	336	448	600	800	
					14	35	59	87	111	144	194	260	347	462	619	825	
					15	38	61	89	115	149	200	268	357	476	638	850	
					16	40	63	92	118	153	206	276	368	490	656	875	
4	3	2	1	½	17	41	65	95	122	158	212	284	378	504	675	900	
					18	43	67	97	125	162	217	291	389	518	694	925	
					19	45	69	100	128	166	223	299	399	532	713	950	
					20	47	71	102	132	171	229	307	410	546	731	975	
6	4½	3	1½	¾	21	49	73	105	135	175	235	315	420	560	750	1,000	
					21	50	74	108	138	179	241	323	431	574	769	1,025	
					22	53	76	110	142	184	247	331	441	588	788	1,050	
					23	55	78	113	145	188	253	339	452	602	806	1,075	
8	6	4	2	1	24	56	80	116	149	193	258	347	462	616	825	1,100	
					25	58	82	118	152	197	264	354	473	630	844	1,125	
					26	60	84	121	155	201	270	362	483	644	863	1,150	
					27	62	86	123	159	206	276	370	494	658	881	1,175	
10	7½	5	2½	1¼	28	64	88	126	162	210	282	378	504	672	900	1,200	
					28	66	89	129	165	214	288	386	515	686	919	1,225	
					29	68	91	131	169	219	294	394	525	700	938	1,250	
					30	70	93	134	172	223	300	402	536	714	956	1,275	
2	1½	1	½	¼	31	72	95	137	176	228	306	410	546	728	975	1,300	
					Spring Rate (lbs/in)												
					82	–	–	30	42	54	70	94	126	168	224	300	400
					B-268	7	15	15	21	27	35	47	63	84	112	150	200
98	–	–	7	10	13	17	23	31	42	56	75	100					
Triple	–	–	5	7	9	12	16	21	28	37	50	67					
Quadruple	–	–	4	5	7	9	12	16	21	28	38	50					

Note: General rule for series selection use Fig. 82 for up to ½" of movement up to 1" use Fig. B-268, up to 2" use Fig. 98, up to 3" use a Triple, up to 4" use a Quadruple. Double check to assure desired variability is achieved.

Spring Hanger Size and Series Selection

How to use hanger selection table (cont.): Should it be impossible to select a hanger in a particular series such that both loads occur within the working range, consideration should be given to a variable spring hanger with a wider working range or a constant support hanger. The cold load is calculated by adding (for up movement) or subtracting (for down movement) the product of spring rate times movement to or from the hot load.

Cold load = (hot load) ± (movement) x (spring rate)

A key criteria in selecting the size and series of a variable spring is a factor known as variability. This is a measurement of the percentage change in supporting force between the hot and cold positions of a spring and is calculated from the formula:

Variability = (Movement) x (Spring Rate) / (Hot Load)

If an allowable variability is not specified, good practice would be to use 25% as recommended by MSS-SP-58.

LOAD TABLE (LBS) FOR SELECTION OF HANGER SIZE (Continued from previous page)																	
Hanger size													Working Range (in) unshaded Shaded Rows Show Overtravel				
Fig. 82, Fig. B-268, Fig. 98, Triple & Quadruple Spring													Figure No.				
10	11	12	13	14	15	16	17	18	19	20	21	22	82	B-268	98	Triple	Quad.
780	1,020	1,350	1,800	2,400	3,240	4,500	6,000	7,990	10,610	14,100	18,750	25,005					
813	1,063	1,406	1,875	2,500	3,375	4,688	6,250	8,322	11,053	14,588	19,531	26,047	¼	½	1	1½	2
845	1,105	1,463	1,950	2,600	3,510	4,875	6,500	8,655	11,495	15,275	20,313	27,089					
878	1,148	1,519	2,025	2,700	3,645	5,063	6,750	8,987	11,938	15,863	21,094	28,131					
910	1,190	1,575	2,100	2,800	3,780	5,250	7,000	9,320	12,380	16,450	21,875	29,173	0	0	0	0	0
943	1,233	1,631	2,175	2,900	3,915	5,438	7,250	9,652	12,823	17,038	22,656	30,215					
975	1,275	1,688	2,250	3,000	4,050	5,625	7,500	9,985	13,265	17,625	23,438	31,256					
1,008	1,318	1,744	2,325	3,100	4,185	5,813	7,750	10,317	13,708	18,213	24,219	32,298					
1,040	1,360	1,800	2,400	3,200	4,320	6,000	8,000	10,650	14,150	18,800	25,000	33,340	¼	½	1	1½	2
1,073	1,403	1,856	2,475	3,300	4,455	6,188	8,250	10,982	14,592	19,388	25,781	34,382					
1,105	1,445	1,913	2,550	3,400	4,590	6,375	8,500	11,315	15,035	19,975	26,563	35,424					
1,138	1,488	1,969	2,625	3,500	4,725	6,563	8,750	11,647	15,477	20,563	27,344	36,466					
1,170	1,530	2,025	2,700	3,600	4,860	6,750	9,000	11,980	15,920	21,150	28,125	37,508	½	1	2	3	4
1,203	1,573	2,081	2,775	3,700	4,995	6,938	9,250	12,312	16,362	21,738	28,906	38,549					
1,235	1,615	2,138	2,850	3,800	5,130	7,125	9,500	12,645	16,805	22,325	29,688	39,591					
1,268	1,658	2,194	2,925	3,900	5,265	7,313	9,750	12,977	17,247	22,913	30,469	40,633					
1,300	1,700	2,250	3,000	4,000	5,400	7,500	10,000	13,310	17,690	23,500	31,250	41,675	¾	1½	3	4½	6
1,333	1,743	2,306	3,075	4,100	5,535	7,688	10,250	13,642	18,132	24,088	32,031	42,717					
1,365	1,785	2,363	3,150	4,200	5,670	7,875	10,500	13,975	18,575	24,675	32,813	43,759					
1,398	1,828	2,419	3,225	4,300	5,805	8,063	10,750	14,307	19,017	25,263	33,594	44,801					
1,430	1,870	2,475	3,300	4,400	5,940	8,250	11,000	14,640	19,460	25,850	34,375	45,843	1	2	4	6	8
1,463	1,913	2,531	3,375	4,500	6,075	8,438	11,250	14,972	19,902	26,438	35,156	46,885					
1,495	1,955	2,588	3,450	4,600	6,210	8,625	11,500	15,305	20,345	27,025	35,938	47,926					
1,528	1,998	2,644	3,525	4,700	6,345	8,813	11,750	15,637	20,787	27,613	36,719	48,968					
1,560	2,040	2,700	3,600	4,800	6,480	9,000	12,000	15,970	21,230	28,200	37,500	50,010	1¼	2½	5	7½	10
1,593	2,083	2,756	3,675	4,900	6,615	9,188	12,250	16,302	21,672	28,788	38,281	51,052					
1,625	2,125	2,813	3,750	5,000	6,750	9,375	12,500	16,635	22,115	29,375	39,063	52,094	¼	½	1	1½	2
1,658	2,168	2,869	3,825	5,100	6,885	9,563	12,750	16,967	22,557	29,963	39,844	53,136					
1,690	2,210	2,925	3,900	5,200	7,020	9,750	13,000	17,300	23,000	30,550	40,625	54,178					
Spring Rate (lbs/in)																	
520	680	900	1,200	1,600	2,160	3,000	4,000	5,320	7,080	9,400	12,500	16,670	82				
260	340	450	600	800	1,080	1,500	2,000	2,660	3,540	4,700	6,250	8,335	B-268				
130	170	225	300	400	540	750	1,000	1,330	1,770	2,350	3,125	4,167	98				
87	113	150	200	267	360	500	667	887	1,180	1,567	2,083	2,778	Triple				
65	85	113	150	200	270	375	500	665	885	1,175	1,563	2,084	Quadruple				

Note: General rule for series selection use Fig. 82 for up to ½" of movement up to 1" use Fig. B-268, up to 2" use Fig. 98, up to 3" use a Triple, up to 4" use a Quadruple. Double check to assure desired variability is achieved.



SPRING HANGERS

Variable Spring

Check List for Requesting a Quote or Ordering

Page ___ of ___



Anvil International
Precision Park
160 Frenchtown Rd.
North Kingstown, RI 02852

For technical information regarding
Variable Springs Call or Email:
Phone Number: (401) 886-3020
Email: eps_contact@anvilintl.com

Finish: Standard Primer: _____ Galvanized: _____ Special Coating: _____

Quantity: _____

Figure No.: Options are: 82, B-268, 98, Triple, Quadruple
or: C-82, C-268, C-98, Triple-CR, Quadruple-CR

Size: Options are: #0 through #22 (B-268 / C-268 also available in #00 and #000) _____

Type: Options are: A through G* _____

Hot (Operating or Design) Load (lbs): _____ (optional)**

Cold/Installed (Factory Set) Load (lbs): _____ (optional)**

Vertical Movement: _____ + (up) or - (down) (optional)**

Mark Number: _____ (If Required)

Travel Stops: Yes: _____ No: _____

If travel stops are ordered and hot & cold loads are not provided, then the spring will be set to mid range load.

Lifting Lugs: Yes: _____ No: _____

Available on sizes weighing 100 lbs or more.

Notes:

* Type G Springs must also include the C-to-C dimension & the load per spring.

** Anvil will determine the appropriate Figure Number and will calculate the Cold Load when only the Hot Load and movement are specified.

Fig. B-268, C-268

Spring Hangers (Type A)

Type A is the basic unit of Fig. B-268 Anvil Variable Spring Hanger. It is designed for attachment to its supporting member by screwing a rod into a tapped hole in the top cap of the hanger the full depth of the top cap ("G" dimension). The upper jam nut should then be locked, securing the hanger. Adjustment of the hanger load is accomplished by turning the coupling on the lower hanger rod until the hanger picks up the load and the load indicator points to the desired position.

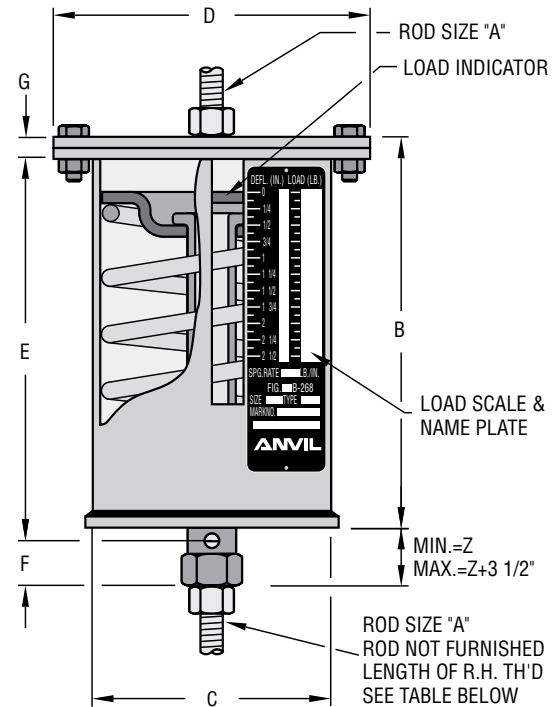


FIG. B-268, FIG. C-268 TYPE A: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Weight	Rod Size A	R.H. Thread Length	Casing Length B	Casing Diam C	Flange Diam D	Rod Take Out E	Min. Thread Engagement F	Thread Depth G	Z
000	5	1/2	5	5 5/8	4	5 1/8	5 1/16	1 5/16	7/16	1 3/16
00	6			7 9/16			7 3/8			1 3/16
0	8	1/2	5	6 11/16	4	5 1/8	6 1/16	1 5/16	7/16	3/4
1	8			7 9/16			6 15/16			1
2	9	1/2	5	8 5/16	5 9/16	6 15/16	7 15/16	1 5/16	7/16	1
3	14			7 15/16			7 9/16			1
4	15	1/2	5	7 15/16	5 9/16	6 15/16	7 15/16	1 5/16	7/16	1 3/8
5	16			8 5/8						11 1/16
6	26	5/8	5	8 13/16	6 5/8	8 3/8	7 13/16	1 5/16	5/8	9/16
7	29			10			9 1/16			5/8
8	31	3/4	6	10 7/16	8 5/8	10 3/4	8 15/16	1 1/4	1	3/4
9	65			12 7/8			11 3/8			1 1/2
10	71	1	6	10 7/16	8 5/8	10 3/4	9 7/8	1 1/4	1	1 1/16
11	65			13 3/8			11 3/8			1/2
12	71	1 1/4	7	13 3/4	8 5/8	10 3/4	9 1/2	1 1/4	1	1 1/8
13	89			13 3/4			11 3/8			3/8
14	93	1 1/2	8	16 1/16	8 5/8	11 3/8	11 3/8	1 15/16	1 1/4	3/8
15	111			13 3/4			14 13/16			1 3/8
16	133	1 3/4	8	18 3/8	8 5/8	11 3/8	16 3/4	1 5/16	1 1/4	1 5/16
17	162			18 3/4			16 3/4			1 15/16
18	330	2 1/4	9	20 1/2	12 3/4	15 7/8	16	2 3/4	2 1/4	2 9/16
19	376			18 3/8			18 3/8			2 1/4
20	480	2 1/2	10	23 3/4	12 3/4	16 7/8	21 5/8	3 5/8	2 3/4	2 11/16
21	556			23 7/8			23 7/8			3 1/16
22	705	3	11	33 3/8	12 3/4	16 7/8	29 3/4	3 5/8	3	3 3/4

SPRING HANGERS

Fig. B-268, C-268

Spring Hangers (Type B & Type C)

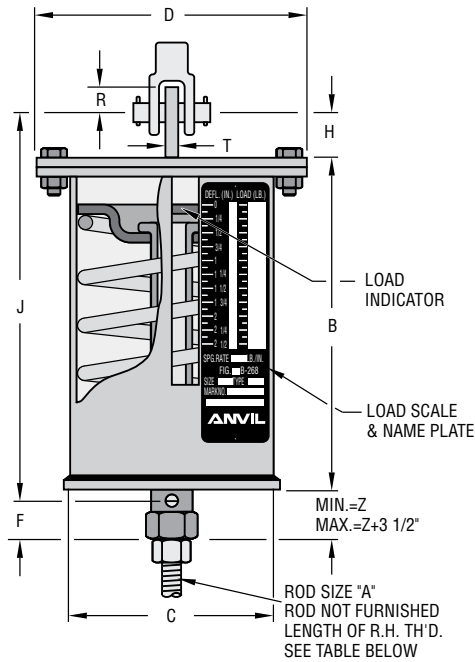


Fig. B-268 Type B

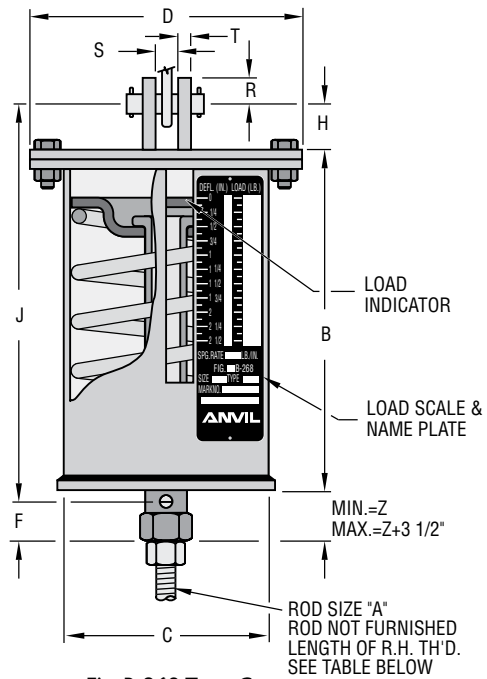


Fig. B-268 Type C

Type B is furnished with a single lug for attachment to the building structure. The lug permits use of a clevis, welded beam attachment or a pair of angles for attachment where headroom is limited.

Type C is furnished with two lugs for attachment to the building structure. These two lugs permit the use of an eye rod, Fig. 55L or a single plate for attachment where headroom is limited.

FIG. B-268, FIG. C-268 TYPE B, C: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Weight (lbs)	Rod Size A	R.H. Thread Length	Lug Hole Size	Casing Length B	Casing Diam C	Flange Diam D	Min. Thd Engagement F	Height of Pin H	Rod Take Out J	R	Clevis Opening S	Thickness T	Z
000	5	1/2	5	1 1/16	5 5/8	4	5 5/8	1 5/16	1 1/2	7	1 1/4	7/8	1/4	1 3/16
00	6				7 9/16					9 1/2				1 3/16
0	8	1/2	5	1 1/16	6 11/16	4	5 5/8	1 5/16	1 1/2	8	1 1/4	7/8	1/4	3/4
1	9				7 9/16					8 5/16				1
2	10	1/2	5	1 1/16	7 15/16	5 5/16	6 15/16	1 5/16	1 1/2	9 1/2	1 1/4	7/8	1/4	1
3	14									9 7/8				1 1/16
4	16	1/2	5	1 1/16	8 5/8	5 5/16	6 15/16	1 5/16	1 1/2	9 15/16	1 1/4	7/8	1/4	1 3/8
5	17									11 1/16				1 1/16
6	27	5/8	5	1 3/16	8 13/16	6 5/8	8 3/8	1 5/16	1 1/2	11 1/16	1 1/4	1 1/16	1/4	9/16
7	30				10					5/8				
8	32	3/4	6	1 5/16	10 7/16	8 5/8	10 3/4	1 1/4	1 1/2	11 7/16	1 1/4	1 1/4	3/8	3/4
9	66				12 1/8					12 3/8				1 1/2
10	72	1	6	1 5/16	10 7/16	8 5/8	10 3/4	1 1/4	2	12 1/2	1 1/2	1 5/8	1/2	1 1/16
11	66				13 1/8					12 3/8				1 1/2
12	71	1 1/4	7	1 1/2	13 1/4	8 5/8	10 3/4	1 1/4	3	14 3/8	2	2	5/8	3/8
13	89				13 3/4					10 3/4				1 1/16
14	94	1 1/4	7	1 1/2	13 3/4	8 5/8	10 3/4	1 15/16	3	15 3/8	2 1/2	2	5/8	3/8
15	114				13 3/4					10 3/4				1 1/16
16	138	1 1/2	8	2	16 1/16	8 5/8	11 3/8	1 15/16	3	19 3/16	2 1/2	2 3/8	3/4	2 1/16
17	168	1 3/4			18 1/8					1 15/16				
18	331	2	9	2 3/8	18 1/4	12 3/4	15 7/8	2 3/4	4	22 7/8	3	2 7/8	3/4	2 9/16
19	378	2 1/4			20 1/2					2 1/16				
20	486	2 1/2	10	2 7/8	23 3/4	12 3/4	16 7/8	3 3/8	4 1/2	28 1/4	4	3 3/8	1	2 11/16
21	568	2 3/4			27 3/16					3 1/16				
22	714	3	11	3 3/8	33 3/8	12 3/4	16 7/8	3 3/8	5	37 3/4	4	3 3/8	1	3 3/4

Fig. B-268, C-268

Spring Hangers (Type D & Type E)

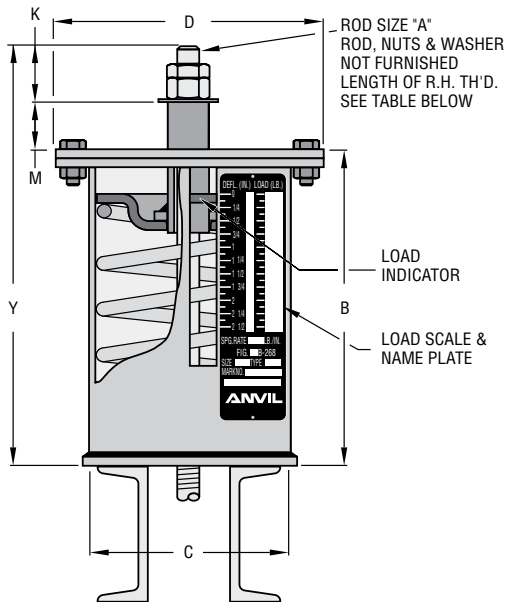


Fig. B-268 Type D

Type D permits adjustment of the hanger from the top. This type has a piece of tubing which passes through a hole in the top cap. Type D is especially adapted for use where the hanger is set above the supporting beams and pipe is suspended below.

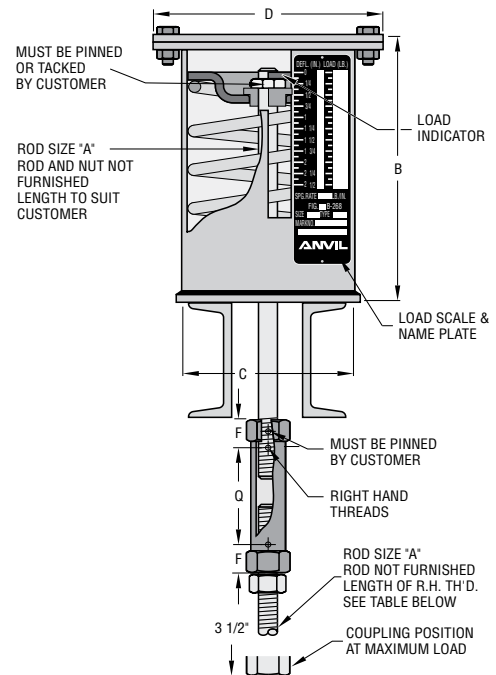


Fig. B-268 Type E

Type E is designed to permit adjustment from either above or below the hanger, when it is installed upon the supporting member and pipe is suspended below. A coupling tapped right hand both ends is furnished.

FIG. B-268, FIG. C-268 TYPE D, E: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Weight (lbs)	Rod Size A	R.H. Thd Length	Casing Length B	Casing Diam C	Flange Diam D	Min Thread Engagement F	Allowance for Nuts K	Height of Spacer M	Rod Length Y	Rod Take-out Q		
000	5	1/2	5	5 5/8	4	5 1/8	1 3/16	1 1/4	3 3/8	10	6		
00	6			7 9/16						11 3/4			
0	6			6 1 1/16						11 1/16			
1	7	1/2	5	7 9/16	4	5 1/8	1 5/16	1 1/4	3 3/8	11 15/16	6		
2	8			8 5/16						12 11/16			
3	11			7 1 5/16						11 11/16			
4	12	1/2	5	8 5/8	5 9/16	6 1 5/16	1 5/16	1 1/4	3 3/8	12 5/16	6		
5	14			8 3/8						13			
6	22			8 3 3/16						13 5/16			
7	25	5/8	5	10	6 5/8	8 3/8	1 5/16	1 1/2	3	14 1/4	6		
8	26			14 3/4									
9	51			10 7/16						15 5/8			
10	58	3/4	6	12 1/8	8 5/8	10 3/4	1 1/4	1 3/4	3	16 7/8	6		
11	51			10 7/16						14 11/16			
12	56			10 7/16						15 13/16			
13	73	1	6	10 7/16	8 5/8	10 3/4	1 1/4	2 1/4	3	18 3/8	6		
14	77			13 3/8						19 1/4			
15	88			1 1/4						7		13 3/8	8 5/8
16	107	1 1/2	8	15 1 5/16	11 3/8	1 1 5/16	3 1/2	3	22 9/16				
17	133	1 3/4	8	18					4	25 1/8			
18	262	2	9	18 1/4							12 3/4	15 7/8	2 3/4
19	300	2 1/4	9	20 1/2	12 3/4	16 7/8	3 3/8	3					
20	370	2 1/2	10	23 3/4					12 3/4	16 7/8			
21	455	2 3/4	10	27 5/16							12 3/4	16 7/8	3 3/8
22	505	3	11	33 3/8	42								

SPRING HANGERS

Fig. B-268, C-268

Spring Hangers (Type F)

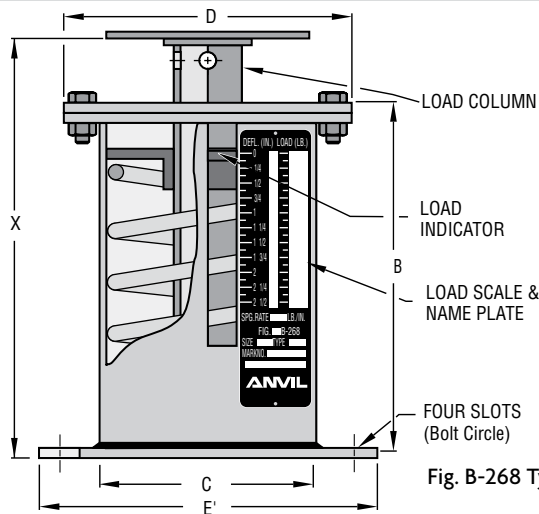
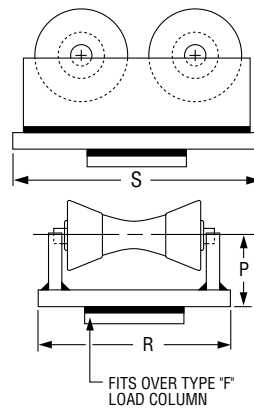


Fig. B-268 Type F



PIPE ROLL: DIMENSIONS (IN), LOAD (LBS)

Roll Size	Roll Mat'l	Max Load	P	R	S
2 - 3½	Cast Iron	780	1¼	4½	4½
4 - 6	Cast Iron	1,900	2⅞	5⅞	5½
8 - 10	Cast Iron	4,200	2¾	8¼	6¾
8 - 10	Steel	14,000	2¾	8¼	6¾
12 - 14	Cast Iron	6,150	3½	10⅞	6¾
12 - 14	Steel	26,000	3½	12	6¾
16 - 20	Cast Iron	9,960	3¾	12	6¾
16 - 20	Steel	34,000	3¾	12	6¾
24	Cast Iron	12,200	4	13¼	7
24	Steel	60,000	4	13¼	10
30	Cast Iron	15,000	4½	16½	8¼
30	Steel	60,000	5	16½	10
36	Cast Iron	24,000	4⅝	19	13
36	Steel	60,000	5	19	12

Type F is for use under a base elbow or piping that must be supported directly from the floor. If more than ¼" of horizontal translation occurs of loads resting on the flat load flange or other flat surface junction between the type F spring hanger and the load, a double roller design pipe roll is recommended. Pipe rolls, as illustrated above, will be furnished on request. For dimension of the pipe roll, refer to Fig. 271, see page 160.

Base type variable springs will be furnished with an extended load column on special order. Guided Load Columns and roller are available on request.

Adjustment to the required load rating is made by inserting a bar into holes provided in the load column and turning the column. The 2" increment between minimum and maximum "X" dimensions is the amount of field adjustment available and is in excess of the amount required for load adjustment.

FIG. B-268, FIG. C-268 TYPE F: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Weight	Casing Length B	Casing Diam C	Flange Diam D	Bottom Flange Sq. E'	Bottom Flange Bolt Circle		Bottom Flange Bolts	Thickness Bottom Flange	Lengths - X*		Load Col. Diam	Load Flange Diam	Thickness of Load Flange
						Min	Max			Min	Max			
000	11	5⅛	4	5⅝	7½	7	8¾	⅝	¼	7⅞	9⅞	1.9	3⅞	⅜
00	12	7⅝								9⅞	11⅞			
0	12	6¾								8¼	10¼			
1	14	7⅝	4	5⅝	7½	7	8¾	⅝	¼	9⅞	11⅞	1.9	3⅞	⅜
2	15	8⅝								9⅞	11⅞			
3	23	8								9⅞	11⅞			
4	25	8	5⅞	6⅝	7½	7	8¾	¾	¼	9⅞	11⅞	2.875	5⅞	⅜
5	26									10¼	12¼			
6	40									10½	12½			
7	46	10⅞	6⅝	8⅝	9	8	10⅞	¾	⅝	11⅞	13⅞	3.5	6⅞	¼
8	47									11⅞	13⅞			
9	91									12⅞	14⅞			
10	98	12¼	8⅝	10¾	13¼	10⅞	16½	¾	½	13⅞	15⅞	4.5	8⅞	½
11	90									12⅞	14⅞			
12	95									12⅞	14⅞			
13	115	13¼	8⅝	10¾	13¼	10⅞	16½	¾	½	14⅞	16⅞	4.5	8⅞	½
14	119									14⅞	16⅞			
15	130									14⅞	16⅞			
16	150	15⅝	8⅝	10¾	13¼	10⅞	16½	¾	½	17⅞	19⅞	2.0	8⅞	½
17	173									20	22			
18	343									20⅞	22⅞			
19	380	20½	12¾	15⅞	17¼	15¼	22	¾	⅝	22⅞	24⅞	2.5	12½	½
20	471									25⅞	27⅞			
21	496									29⅞	31⅞			
22	654	33⅞	12¾	16⅞	17¼	15¼	22	¾	⅝	35⅞	37⅞	3.0	12½	½

*Hanger take-out or installed height. With pipe movement up, cold to hot, installed height should be the mid-point between the minimum and maximum "X" dimension, plus thickness of load flange. With pipe movement down, cold to hot installed height should be mid-point between the minimum and maximum "X" dimension, plus the amount of vertical movement and load flange thickness. Note: Sizes 16" and larger are furnished with a hexagon nut at the top of a solid load column to facilitate adjustment with a wrench.

Fig. B-268, Fig. C-268

Spring Hangers (Type G)

Type G is a complete trapeze assembly. The hanger consists of two standard spring units plus a pair of back-to-back channels welded at each end to the hanger casing.

The "P" dimension can be varied with the customer's instructions. In sizing a Type G hanger, it must be remembered that each standard spring unit carries one-half of the total pipe load.

Therefore, in using the hanger selection chart, use one-half of the total pipe load as the hot load.

When the pipe line is designed so as not to be centered on the channel, one spring of the trapeze will carry a heavier load, the other a lighter load. Care should be taken in calculating the load of each hanger and in choosing the proper sized spring in such cases. The center-to-center rod dimension must be specified when ordering.

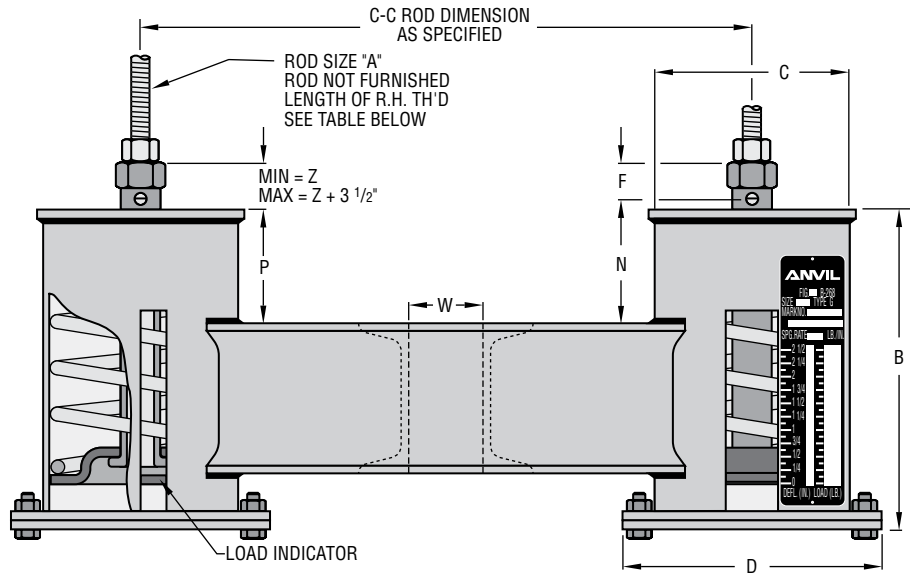


Fig. B-268 Type G

FIG. B-268, C-268 TYPE G: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Weight*	Rod Size A	R.H. Thread Length	Casing Length B	Casing Dia. C	Flange Dia. D	Min Thread Engagement F	Rod Take Out N	Channel Size (lb/ft)	Max C-C	Space Between Channels W	P	Z
000	24	1/2	5	5 3/8	4	5 1/8	1 5/16	1 3/8	C3 x 4.1	24	5/8	1 1/2	1 3/16
00	26			7 9/16				1 3/4					1 3/16
0	30	1/2	5	6 11/16	4	5 1/8	1 5/16	1 5/16	C3 x 4.1	24	5/8	1 1/2	3/4
1	31			7 9/16				1 9/16					1
2	32			8 5/16				2 1/16					1 1/16
3	41	1/2	5	7 15/16	5 9/16	6 15/16	1 5/16	2 1/16	C3 x 4.1	30	3/4	2	1
4	42			7 15/16				2 7/16					1 3/8
5	43			8 5/8				1 3/4					1 11/16
6	63	5/8	5	8 13/16	6 5/8	8 3/8	1 5/16	1 5/8	C3 x 4.1	36	1	2	9/16
7	69			10				1 11/16					5/8
8	73			10				1 11/16					5/8
9	143	3/4	6	10 7/16	8 5/8	10 3/4	1 1/4	2 1/2	C4 x 5.4	36	1 1/4	3	3/4
10	157			12 1/8				3 3/4					1 1/2
11	145			10 7/16				3 7/16					1 11/16
12	157	1	6	10 7/16	8 5/8	10 3/4	1 1/4	3 13/16	C5 x 6.7	36	1 1/2	3	1 1/16
13	195			13 1/8				3 3/4					1 1/2
14	203	1 1/4	7	13 1/4	8 5/8	10 3/4	1 1/4	3 3/8	C6 x 10.5	33	1 1/2	3	3/8
15	250	1 1/4	7	13 1/4				10 3/4					3 15/16
16	298	1 1/2	8	16 1/16	8 5/8	11 3/8	1 15/16	4 1/8	C8 x 11.5	36	2 1/8	3	2 7/16
17	354	1 3/4		18 1/8				4					1 15/16
18	690	2	9	18 1/4	12 3/4	15 7/8	2 3/4	4	C12 x 20.7	42	2 3/8	3	2 9/16
19	783	2 1/4		20 1/2				4 1/8					2 3/8
20	993	2 1/2	10	23 3/4	12 3/4	16 7/8	3 5/8	4 1/8	C15 x 33.9	40	2 7/8	3	2 11/16
21	1,197	2 3/4	10	27 3/16				4 5/16					3 11/16
22	1,496	3	11	33 3/8	12 3/4	16 7/8	3 5/8	4 3/8	C15 x 33.9	48	3 3/8	3	3 3/4

* Weight based on 24" center-to-center dimension



Fig. 82, C-82

Short Spring Hangers

Fig. 82 Type A

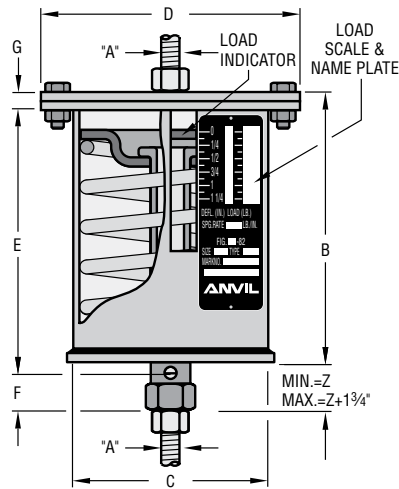


Fig. 82 Type B

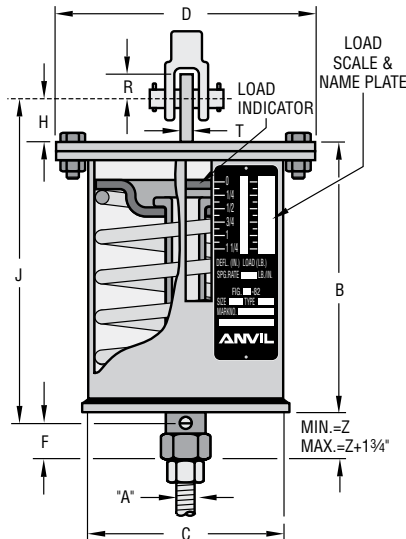


Fig. 82 Type C

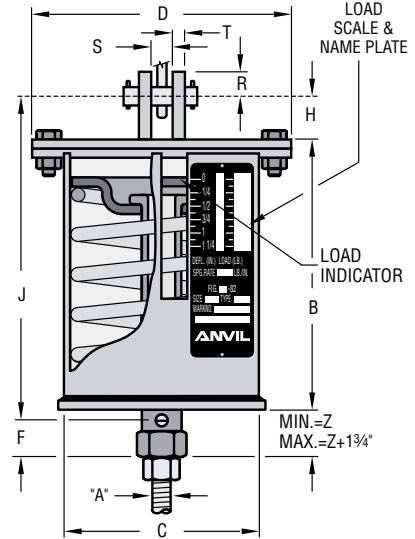


Fig. 82 Type D

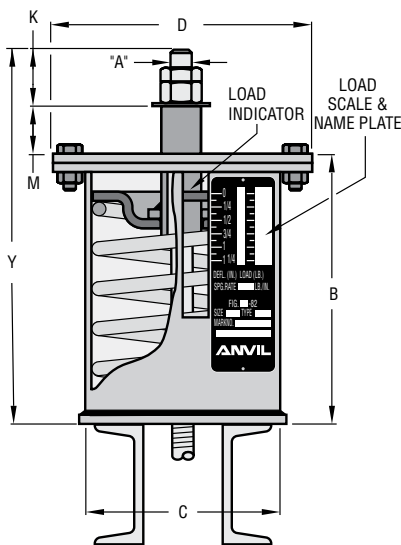


Fig. 82 Type E

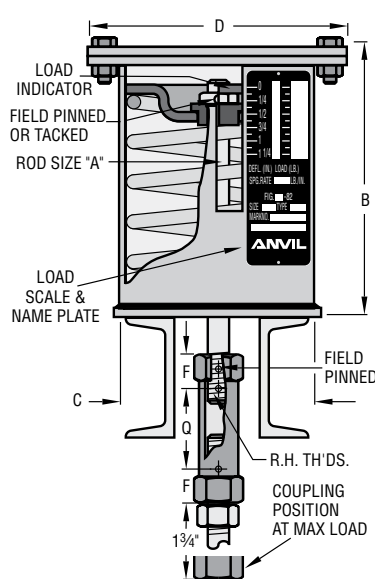


Fig. 82 Type F

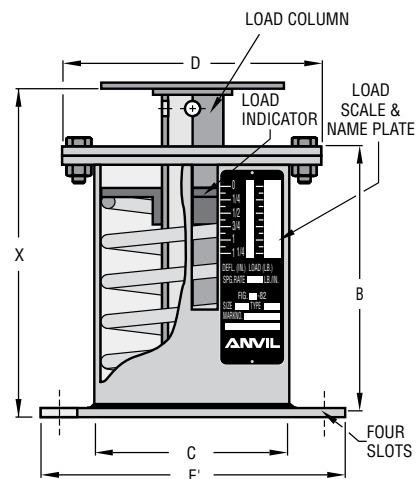
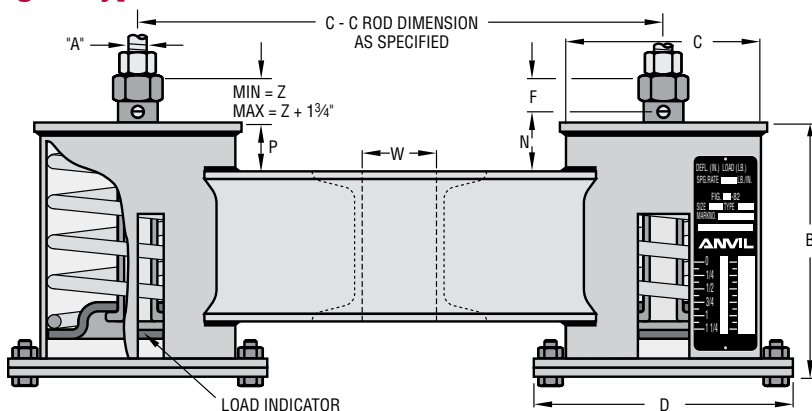


Fig. 82 Type G



The Anvil variable short spring hanger, Fig. 82, embodies all of the Fig. B-268 features and is designed to the same exacting specifications. This is useful in confined areas where thermal movement of the piping is relatively small. The minimum and maximum loads for the individual sizes of the Fig. 82 are exactly the same as those for the Fig. B-268. This hanger is offered in the seven basic types as shown here. The load table and instructions for sizing and ordering this hanger are found on page 172 through 175.

SPRING HANGERS

FIG. 82, C-82 SHORT SPRING: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Rod Size A	R. H. Thread Length	Casing		Flange Dia. D	Min Thread Engage F	Z	Rod Take Out By Type				Type A Thread Depth G	Types B, C					Type D		
			Length B	Dia. C				A	B,C	E	G		Lug Hole Size	Pin Hgh H	R	Clevis Opening S	Thk. T	Rod Length Y	Nut Allow. K	Height Spacer M
0							15/16	45/16	6 1/4		1							7 1/2		
1	1/2	3	4 3/4	4	5 1/8	15/16	11/16	4 1/16	6	2 1/8	3/4	7/16	1 1/16	1 1/2	1 1/4	7/8	1/4	7 3/4	1 1/4	1 3/4
2			5 3/8				1 1/16	5 1/16	7		1 1/8							8 3/8		
3			5 1/4				9/16	4 7/16	6 3/8		5/8							7 7/8		
4	1/2	3	5 1/4	5 9/16	6 15/16	15/16	1 3/16	5 1/16	7	2 1/8	1 1/4	7/16	1 1/16	1 1/2	1 1/4	7/8	1/4	8 1/4	1 1/4	1 3/4
5			5 3/8				1 1/16				1 1/8							8 5/8		
6			5 13/16				1 3/16	5 1/16	7 3/16		1 1/8							9 1/16		
7	5/8	3	6 1 1/16	6 5/8	8 3/8	15/16	1 1/16	6 3/16	8 5/16	2 1/8	2 1/8	5/8	1 3/16	1 1/2	1 1/4	1 1/16	1/4	9 11/16	1 1/2	1 3/4
8							1 3/16	5 5/16	8 1/16		1 1/8							9 5/16		
9			7 1/4				1 1/8	6 1/8	8 5/8		1 1/8							11 1/4		
10	3/4	4	8 1/4	8 5/8	10 3/4	1 1/4	1 3/8	7 3/8	9 7/8	2	2 1/8	1	1 5/16	1 1/2	1 1/4	1 1/4	3/8	11 3/4	1 3/4	1 3/4
11			7 1/4				1 3/16	6 3/16	8 11/16		1 5/16							10 7/16		
12			7 1/4				7/8	6 3/16	8 11/16		1 1/8							11 1/4		
13	1 1/4	4	8 3/4	8 5/8	10 3/4	1 1/4	1	7 3/8	10 3/8	2	2 3/4	1	1 1/4	2	1 1/2	1 5/8	1/2	12 5/8	2 1/4	1 3/4
14	1 1/4		8 7/8				3/4	7 3/8	11 3/8		2 1/2		1 1/2	3	2	2	5/8	13 5/8	3	
15	1 1/4	4	8 7/8		10 3/4	1 1/4	3/4	7 3/8	11 3/8	2	2 1/2	1	1 1/2		2	2	5/8	14 1/8	3	
16	1 1/2	5	10 5/8	8 5/8	11 3/8	1 15/16	2	9 5/16	13 11/16	6	1 1/16	1 3/8	1 3/4	3	2 1/2	2 3/8	3/4	15 7/8	3 1/2	1 3/4
17	1 3/4	6	11 1/8					10 9/16	14 5/16		2 1/16		2			2 5/8		17 5/8	4	
18	2	7	13				2 1/2	10 11/16	16 13/16		7/16		2 3/8	4		2 7/8	3/4	19 3/16	4 9/16	
19	2 1/4		14	12 3/4	15 7/8	2 3/4	2 3/16	11 3/4	18 3/8	6	1	2 1/4	2 5/8		3	3 1/8	3/4	20 5/8	5	1 3/4
20	2 1/2	8	16 1/8				2 1/16	14	20 5/8		1 1/8		2 7/8	4 1/2	4	3 3/8	1	23 3/16	5 9/16	
21	2 3/4	9	18					13 5/8	20 7/8		3/8	2 3/4	3 1/8	4 1/2		3 5/8		25	6 1/4	1 1/4
22	3	10	22 1/4	12 3/4	16 7/8	3 5/8	2 3/4	17 5/8	25 3/8	7	2 3/8	3	3 3/8	5	4	3 3/8	1	29 5/8	6 5/8	1 3/4

Hanger Size	Type F										Type G				Weight						
	E' Bottom Flange		Bottom Flange		Load Col. Dia.	Load Flange		Length X ■		Channel Size (lbs/ft)	Max C-C	Space Between Channels - W	P	Type							
	Size Sq.	Bolt Circle		Bolts		Thick	Dia.	Thick	Min					Max	A,B,C	D,E	F	G*			
		Min	Max																		
0																		6	5	11	27
1	7 1/2	7	8 3/4	5/8	1/4	1.900	3 7/8	3 1/16	6 5/16	6 13/16	C3 x 4.1	24	5/8	3/4				7	6	11	29
2									6 15/16	7 7/16								8	7	12	
3									6 7/8	7 7/8	C3 x 4.1	30	3/4	3/4				11	10	10	33
4	7 1/2	7	8 3/4	3/4	1/4	2.875	5 5/8	3 1/16	7	7 1/2								12	11	20	35
5									7	7 1/2								13	12	21	36
6									7 1/2	8								20	19	33	51
7	9	8	10 7/8	3/4	3/8	3.50	6 3/8	1/4	8 3/8	8 7/8	C3 x 4.1	36	1	3/4				23	22	35	57
8																		24	23	36	59
9									8 15/16	9 15/16								56	52	78	125
10	13 1/4	10 1/16	16 1/2	3/4	1/2	4.50	8 3/8	1/2	9 9/16	10 15/16	C4 x 5.4	36	1 1/4	1				62	58	84	137
11									8 15/16	9 15/16								55	51	76	121
12									8 15/16	9 15/16								58	53	78	132
13	13 1/4	10 1/16	16 1/2	3/4	1/2	4.50	8 3/8	1/2	10 7/16	11 7/16	C5 x 6.7	36	1 1/2	1				69	63	81	154
14									10 9/16	11 9/16		33						72	55	91	159
15						4.50			10 9/16	11 9/16	C6 x 10.5		1 1/2					88	79	100	198
16	13 1/4	10 1/16	16 1/2	3/4	1/2	2.00	8 3/8	1/2	12 5/8	13 3/8	C8 x 11.5	36	2 1/8	1				102	91	112	230
17									13 3/8	14 7/8								120	105	126	266
18									15 1/16	16 1/16								259	226	270	
19	17 1/4	15 3/4	22	3/4	5/8	2.50	12 1/2	1/2	16 1/16	17 1/16								286	246	275	
20									18 3/16	19 3/16								350	302	344	
21									20 1/8	21 1/8								401	339	348	
22	17 1/4	15 3/4	22	3/4	5/8	3.00	12 1/2	1/2	24 3/8	25 3/8								490	431	443	

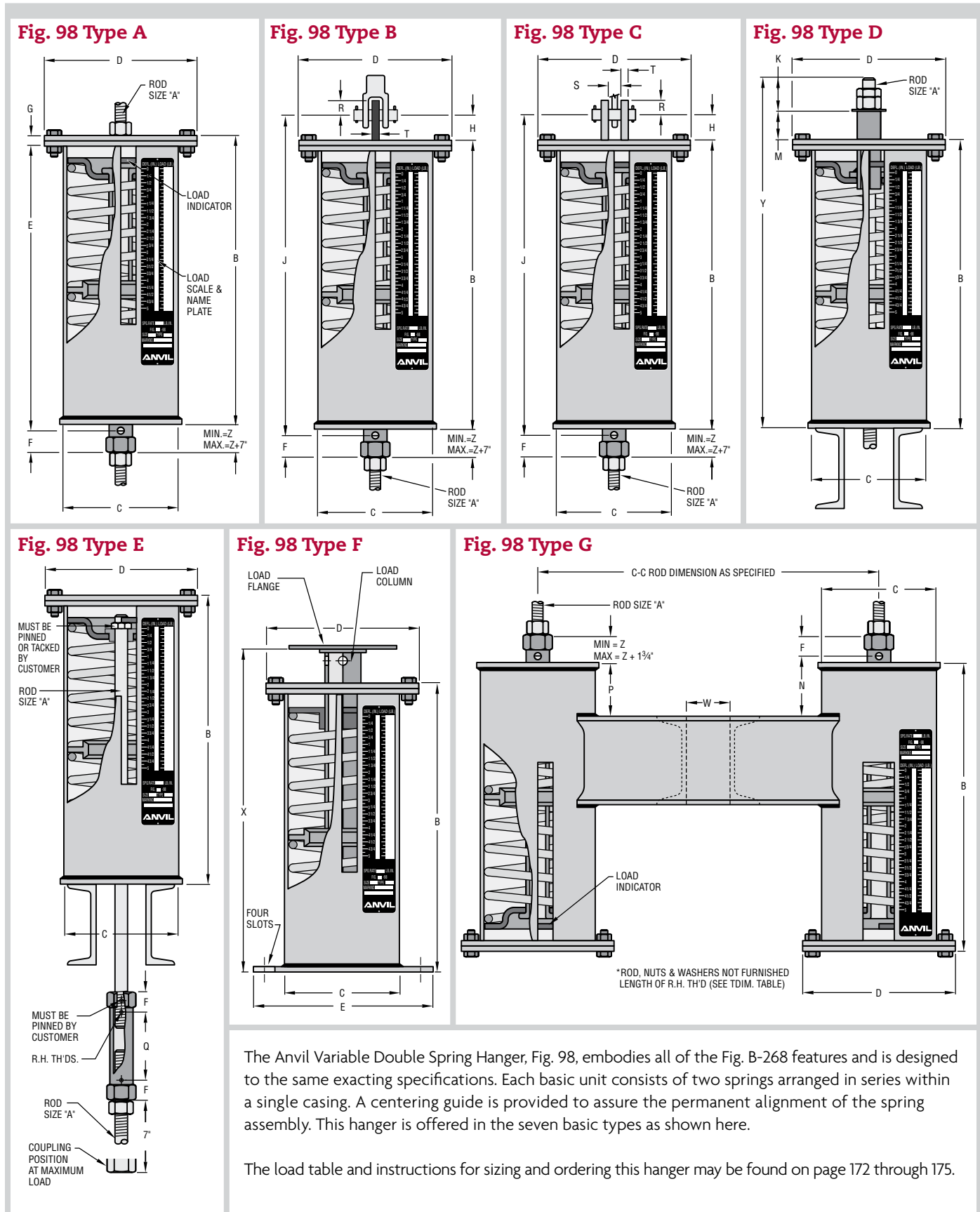
■ Hanger take-out or installed height. With pipe movement up, cold to hot, installed height should be the mid point between the minimum and maximum "X" dimension, plus thickness of load flange. With pipe movement down, cold to hot installed height should be mid-point between the minimum and maximum "X" dimension, plus the amount of vertical movement and load flange thickness. (Type F only).

* Weight based on 24" center-to-center dimension. See page 180 for Type F roller and guided load column information. Attachment rods and nuts not furnished.



Fig. 98, C-98

Double Spring



SPRING HANGERS

FIG. 98, C-98 DOUBLE SPRING: DIMENSIONS (IN) • WEIGHT (LBS)

Hanger Size	Rod Size A	R.H. Thread Length	Casing		Flange Dia. D	Min. Thread Engage F	Z	Rod Take Out By Type				Type A	Types B, C					Type D		
			Length B	Dia. C				A	B, C	E	G	Thread Depth G	Lug Hole Size	Pin Hgt H	R	Clevis Opening S	Thk. T	Rod Length Y	Nut Allow. K	Height Spacer M
								E	J	Q	N									
0			12 ⁵ / ₈				1 ⁵ / ₁₆	12 ³ / ₁₆	14 ¹ / ₈		1 ¹ / ₂							19 ³ / ₈		
1	1/2	9	14 ³ / ₈	4	5 ¹ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆	13 ³ / ₁₆	15 ⁷ / ₈	9	1 ¹ / ₂	7/16	1 ¹ / ₁₆	1 ¹ / ₂	1 ¹ / ₄	7/8	1/4	21 ¹ / ₈	1 ¹ / ₄	5 ¹ / ₂
2			15 ⁷ / ₈				1 ¹ / ₁₆	15 ⁵ / ₁₆	17 ¹ / ₈		1 ¹ / ₄							22 ¹ / ₂		
3	1/2	9	14	5 ⁹ / ₁₆	6 ¹⁵ / ₁₆	1 ⁵ / ₁₆	1 ³ / ₁₆	13 ⁷ / ₁₆	15 ³ / ₈	9	1 ⁷ / ₈	7/16	1 ¹ / ₁₆	1 ¹ / ₂	1 ¹ / ₄	7/8	1/4	20 ³ / ₄	1 ¹ / ₄	5 ¹ / ₂
4			15 ¹ / ₄				1 ³ / ₁₆	15 ³ / ₁₆	17 ³ / ₈		2 ³ / ₈							22		
5			16 ³ / ₈				1 ¹ / ₁₆	15 ⁵ / ₁₆	17 ³ / ₈		1 ³ / ₄							23 ³ / ₈		
6	5/8	9	16 ¹¹ / ₁₆	6 ³ / ₈	8 ³ / ₈	1 ⁵ / ₁₆	1 ³ / ₁₆	15 ⁵ / ₁₆	18 ¹ / ₁₆	9	1 ⁷ / ₈	5/8	1 ³ / ₁₆	1 ¹ / ₂	1 ¹ / ₄	1 ¹ / ₁₆	1/4	23 ¹¹ / ₁₆	1 ¹ / ₂	5 ¹ / ₂
7			18 ³ / ₈				1 ¹ / ₈	18 ³ / ₁₆	20 ³ / ₁₆		2 ³ / ₁₆							25 ⁵ / ₈		
8			19 ⁹ / ₁₆				1 ¹ / ₁₆	18 ¹ / ₁₆	20 ¹³ / ₁₆		1 ³ / ₄							26 ⁹ / ₁₆		
9	3/4	9	20 ³ / ₁₆	8 ⁵ / ₈	10 ³ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆	18 ⁷ / ₈	21 ³ / ₈	9	2 ¹¹ / ₁₆	1	1 ⁵ / ₁₆	1 ¹ / ₂	1 ¹ / ₄	1 ¹ / ₄	3/8	27 ⁷ / ₁₆	1 ³ / ₄	5 ¹ / ₂
10			22 ⁵ / ₈				1	21 ³ / ₈	23 ³ / ₈		2 ³ / ₄							29 ⁷ / ₈		
11		10	18 ¹ / ₄	8 ⁵ / ₈	10 ³ / ₄	1 ¹ / ₄	7 ⁵ / ₈	16 ³ / ₈	19 ³ / ₈	12	2 ⁵ / ₈	1	1 ¹ / ₂	1 ¹ / ₄	1 ¹ / ₂	1 ⁵ / ₈	1/2	25 ¹ / ₂	2 ¹ / ₄	5 ¹ / ₂
12	1	10	19 ¹ / ₂				3 ⁵ / ₈	17 ³ / ₈	20 ⁷ / ₈		3 ³ / ₈							27 ¹ / ₄		
13	1 ¹ / ₄		24 ³ / ₄	8 ⁵ / ₈	10 ³ / ₄	1 ¹ / ₄	3 ¹ / ₄	23 ¹ / ₄	26 ¹ / ₄	12	3 ¹ / ₂	1	1 ¹ / ₄	2	1 ¹ / ₂	1 ⁵ / ₈	1/2	32 ³ / ₈	3	5 ¹ / ₂
14	1 ¹ / ₄		24 ⁷ / ₈				1/2	23 ³ / ₈	27 ¹ / ₈		3 ³ / ₄							3 ³ / ₄		
15	1 ¹ / ₄	10	24 ⁷ / ₈	8 ⁵ / ₈	10 ³ / ₄	1 ¹⁵ / ₁₆	1/2	23 ³ / ₈	27 ¹ / ₈	12	3 ¹ / ₄	1	1 ¹ / ₂	2	2	5/8	33 ³ / ₄	3	5 ¹ / ₂	
16	1 ¹ / ₂	11	29 ³ / ₈		11 ³ / ₈		2	28 ³ / ₁₆	32 ¹⁵ / ₁₆		7						4 ¹ / ₁₆			1 ³ / ₈
17	1 ³ / ₄	12	34	12 ³ / ₄	15 ⁵ / ₈	2 ³ / ₄	2 ¹ / ₈	32 ¹³ / ₁₆	37 ³ / ₁₆	7	4 ³ / ₁₆	2 ¹ / ₄	2 ⁵ / ₈	4 ¹ / ₂	3	2 ³ / ₈	3/4	43 ¹ / ₂	4	5 ¹ / ₂
18	2	12	33 ³ / ₄				2 ¹ / ₁₆	31 ³ / ₈	37 ³ / ₁₆		4 ¹ / ₈							4 ¹ / ₈		
19	2 ¹ / ₄	13	37 ³ / ₄	12 ³ / ₄	15 ⁵ / ₈	2 ³ / ₄	2 ⁹ / ₁₆	35 ¹ / ₂	42 ¹ / ₈	7	4	2 ¹ / ₄	2 ⁵ / ₈	4 ¹ / ₂	3	3 ¹ / ₈	3/4	43 ³ / ₁₆	4 ⁹ / ₁₆	5 ¹ / ₂
20	2 ¹ / ₂	14	44 ¹ / ₄				2 ¹¹ / ₁₆	42 ¹ / ₈	48 ³ / ₄		4 ¹ / ₈							4 ¹ / ₈		
21	2 ³ / ₄	14	49 ³ / ₈	12 ³ / ₄	16 ⁷ / ₈	3 ⁵ / ₈	2 ¹ / ₁₆	45 ¹ / ₁₆	52 ¹ / ₁₆	7	3 ⁵ / ₁₆	2 ³ / ₄	3 ¹ / ₈	4 ¹ / ₂	4	3 ⁵ / ₈	1	60 ⁵ / ₈	6 ¹ / ₄	5 ¹ / ₂
22	3	15	62				3 ¹ / ₂	58 ¹ / ₈	66 ¹ / ₈		4 ¹ / ₈							4 ¹ / ₈		

Hanger Size	Type F										Type G				Weight																						
	E' Bottom Flange		Bottom Flange		Load Col. Dia.	Load Flange		Length X ■		Channel Size (lbs/ft)	Max C-C	Space Between Channels - W	P	Type																							
	Size Sq.	Bolt Circle	Min	Max		Bolts	Thick	Dia.	Thick					Min	Max	A,B,C	D,E	F	G*																		
0																		12	12	20	37																
1	7 ¹ / ₂	7	8 ³ / ₄	5/8	1/4	1.90	3 ⁷ / ₈	3 ³ / ₁₆	14 ³ / ₁₆	16 ³ / ₁₆	C3 x 4.1	24	5/8	1 ¹ / ₂				14	14	21	41																
2																																		16	16	23	45
3	7 ¹ / ₂	7	8 ³ / ₄	3/4	1/4	2.88	5 ³ / ₄	3 ³ / ₁₆	15 ⁵ / ₈	17 ⁵ / ₈	C3 x 4.1	30	3/4	2				22	21	35	55																
4																																		25	24	39	61
5																																			27	26	41
6	9	8	10 ⁷ / ₈	3/4	3/8	3.50	6 ³ / ₈	1/4	18 ³ / ₈	20 ³ / ₈	C3 x 4.1	36	1	2				41	40	62	93																
7																																		49	48	72	109
8	13 ¹ / ₄	10 ¹ / ₁₆	16 ¹ / ₂	3/4	1/2	4.50	8 ³ / ₈	1/2	20 ⁵ / ₁₆	22 ⁵ / ₁₆	C3 x 4.1	36	1 ¹ / ₄	2				61	52	75	133																
9																																		97	94	136	207
10	13 ¹ / ₄	10 ¹ / ₁₆	16 ¹ / ₂	3/4	1/2	4.50	8 ³ / ₈	1/2	21 ⁷ / ₈	23 ³ / ₈	C4 x 5.4	36	1 ¹ / ₄	2				114	108	150	241																
11																																		96	95	134	209
12	13 ¹ / ₄	10 ¹ / ₁₆	16 ¹ / ₂	3/4	1/2	4.50	8 ³ / ₈	1/2	21 ³ / ₁₆	23 ³ / ₁₆	C5 x 6.7	36	1 ¹ / ₂	3				108	104	144	223																
13																																		144	139	181	305
14																																			153	147	188
15	13 ¹ / ₄	10 ¹ / ₁₆	16 ¹ / ₂	3/4	1/2	2.00	8 ³ / ₈	1/2	26 ³ / ₁₆	28 ³ / ₁₆	C6 x 10.5	36	1 ¹ / ₂	3				172	163	201	368																
16																																		218	202	241	462
17	17 ¹ / ₄	15 ³ / ₄	22	3/4	5/8	2.50	12 ¹ / ₂	1/2	26 ¹ / ₁₆	28 ¹ / ₁₆	C8 x 11.5	36	2 ¹ / ₈	3				273	247	287	572																
18																																		512	477	550	1,056
19																																			600	548	624
20	17 ¹ / ₄	15 ³ / ₄	22	3/4	5/8	3.00	12 ¹ / ₂	1/2	39 ¹³ / ₁₆	41 ¹³ / ₁₆	C12 x 20.7	42	2 ³ / ₈	3				802	723	807	1,633																
21																																		940	845	872	1,965
22	17 ¹ / ₄	15 ³ / ₄	22	3/4	5/8	3.00	12 ¹ / ₂	1/2	51 ⁷ / ₈	53 ⁷ / ₈	C15 x 33.9	48	3 ³ / ₈	3				1,240	1,140	1,184	2,566																

■ Hanger take-out or installed height. With pipe movement up, cold to hot, installed height should be the mid point between the minimum and maximum "X" dimension, plus thickness of load flange. With pipe movement down, cold to hot installed height should be mid-point between the minimum and maximum "X" dimension, plus the amount of vertical movement and load flange thickness. (Type F only).

* Weight based on 24" center-to-center dimension. See page 180 for Type F roller and guided load column information. Attachment rods and nuts not furnished.



SPRING HANGERS

Triple Spring, Triple Spring-GR

Triple Type A

Triple Type B

Triple Type C

Triple Type D

Triple Type E

Triple Type F

Triple Type G

Triple Type E (continued)

The Anvil Variable Triple Spring Hanger embodies all of the Fig. B-268 features and is designed to the same exacting specifications. Each basic unit consists of three springs arranged in series within a single casing. A centering guide is provided to assure the permanent alignment of the spring assembly. This hanger is offered in the seven basic types as shown here.

The load table and instructions for sizing and ordering this hanger may be found on page 172 through 175.

Triple Spring, Triple Spring-GR

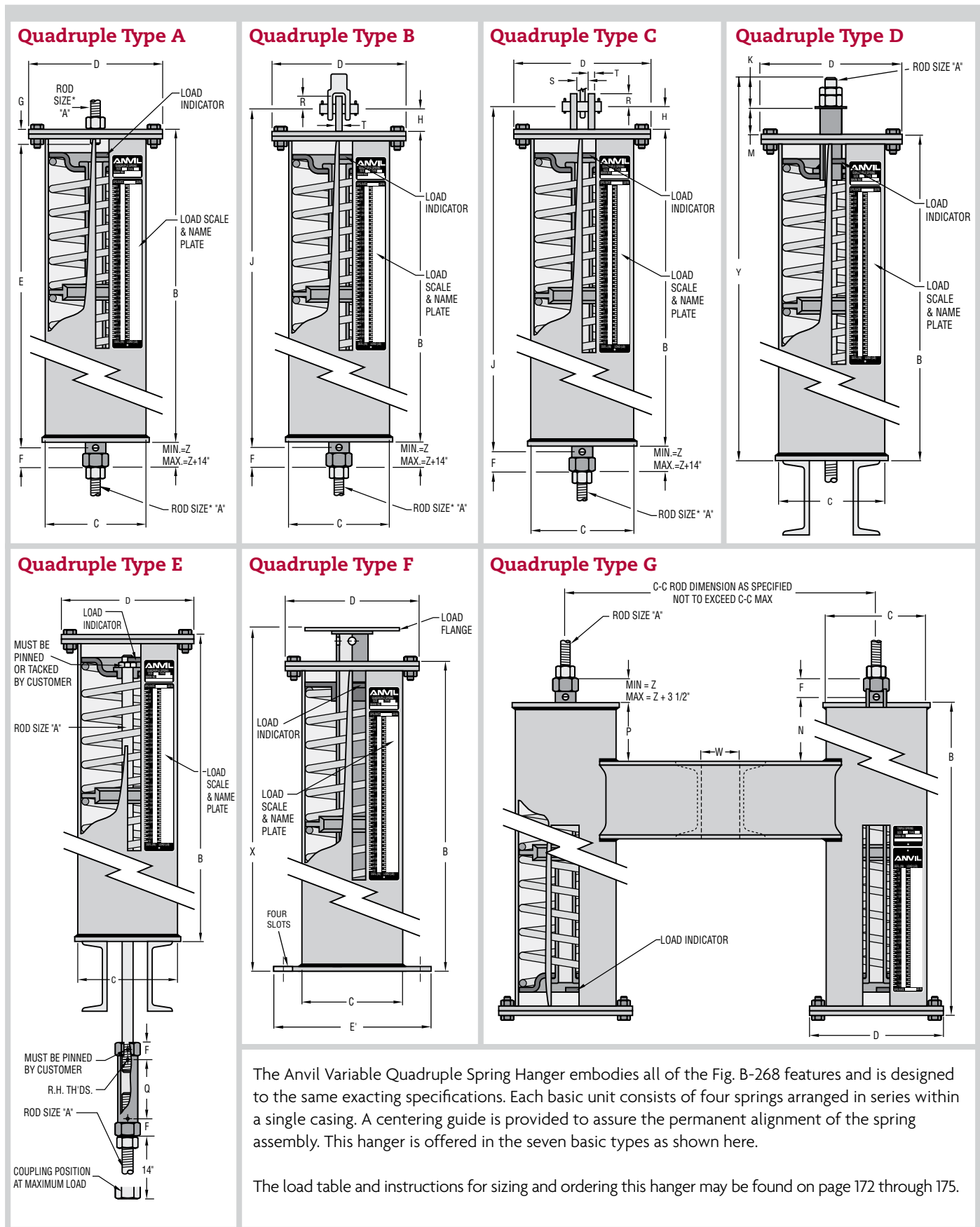
TRIPLE SPRING: DIMENSIONS (IN)																					
Hanger Size	General Dimensions						Rod Take Out For Types					Type A	Type D		Type F		Type G				
	Rod Size A	R.H. Thread Length	Casing Length B	Casing Dia. C	Min Thread F	Z	A	B & C	D	E	G	Depth Thread G	K	M	Loaded Length Dim X		P				
							E	J	Y	Q	N				Min	Max					
0	1/2	12	19 1/8	4	1 5/16	1 5/16	19 1/8	20 5/8	28 1/8	11 1/8	1 1/2	7/16	1 1/4	7 3/4	20 15/16	22 15/16	1 1/2				
1			21 3/4				23 3/4	30 3/4	23 3/16						25 1/2	33		23 9/16	25 9/16		
2			24				25 15/16	27 9/16	29 9/16												
3	1/2	12	21 3/16	5 9/16	1 5/16	1 5/16	21 3/16	22 11/16	30 3/16	11 1/8	2	7/16	1 1/4	7 3/4	23	25	2				
4			23 1/16				24 9/16	32 1/16	24 7/8						26 7/8						
5			25 1/8				26 5/8	34 1/8	26 15/16						28 15/16						
6	5/8	12	25	6 5/8	1 5/16	1 5/16	25	26 1/2	34 3/16	11 1/8	2	5/8	1 1/2	7 11/16	26 15/16	28 15/16	2				
7			27 15/16				29 1/16	37 1/8	29 7/8						31 7/8						
8			29 5/16				30 13/16	38 1/2	31 1/4						33 1/4						
9	3/4	13	29 9/16	8 5/8	1 1/4	1 1/4	29 9/16	31 1/16	38 7/8	11 1/2	3	1	1 3/4	7 9/16	31 5/8	33 5/8	3				
10			33 1/4				34 3/4	42 9/16	35 5/16						37 5/16						
11			26 11/16				28 3/16	36	28 3/4						30 3/4						
12	1	13	28 9/16	8 5/8	1 1/4	1 1/4	28 9/16	30 9/16	38 3/8	11 1/2	3 7/8	1	2 1/4	7 9/16	30 5/8	32 5/8	4				
13			36 1/4				38 1/4	46 1/16	38 5/16						40 1/16						
14			36 3/4				39 5/8	47 5/16	38 13/16						40 13/16						
15	1 1/4	14	36 5/8	8 5/8	1 3/8	1 1/4	36 5/8	39 1/2	47 3/16	10 9/16	4	1 3/8	3	7 9/16	38 11/16	40 11/16	4				
16	1 1/2	15	44 1/16		1 15/16	1 15/16	44 1/16	47 1/16	54 5/8	11 1/16					4	1 3/8		3 1/2	7 1/16	46 1/8	48 1/8
17	1 3/4		50 1/4		50 1/4	53 1/4	61 5/16	11 9/16	4	4					7 1/16	52 5/16		54 5/16			
18	2	16	49 7/8	12 3/4	2 3/4	2 3/4	49 7/8	53 7/8	60 11/16	10 7/8	4	2 1/4	4 9/16	7	51 5/16	53 5/16	4				
19	2 1/4		55 7/8				55 7/8	60 3/8	67 7/8	11 7/16					5	58 1/16		60 1/16			
20	2 1/2		65 5/8				65 5/8	70 7/8	78 3/16	11 15/16					5 9/16	67 13/16		69 13/16			
21	2 3/4	17	73 5/16	12 3/4	3 5/8	3 5/8	73 5/16	76 13/16	87 7/8	11	4	2 3/4	6 1/4	9 5/16	75 7/16	77 7/16	4				
22	3	18	91 1/2				91 1/2	95 1/2	106 7/16	11 1/2					3	6 5/8		93 5/8	95 5/8		

Attachment rods and nuts not furnished.
See page 180 for Type F roller and guided load column information.

See Fig. B-268 for dimensions not listed

SPRING HANGERS

Quadruple Spring, Quadruple Spring-CR



Quadruple Spring, Quadruple Spring-CR

QUADRUPLE SPRING: DIMENSIONS (IN)																				
Hanger Size	General Dimensions						Rod Take Out For Types					Type A	Type D		Type F		Type G			
	Rod Size A	R.H. Thread Length	Casing Length B	Casing Dia. C	Min Thread F	Z	A	B & C	D	E	G	Depth Thread G	K	M	Loaded Length Dim X		P			
							E	J	Y	Q	N				Min	Max				
0	1/2	16	25 1/8	4	1 5/16	1 5/16	25 1/8	26 5/8	37 1/8	15 1/8	1 1/2	7/16	1 1/4	7 3/4	26 15/16	28 15/16	1 1/2			
1			28 5/8				30 1/8	40 5/8	30 7/16						32 7/16					
2			31 1/8				33 1/8	43 3/8	33 7/16						35 7/16					
3	1/2	16	27 7/8	5 9/16	1 5/16	1 5/16	27 7/8	29 3/8	39 7/8	15 1/8	2	7/16	1 1/4	7 3/4	29 11/16	31 11/16	2			
4			30 3/8				31 7/8	42 3/8	32 3/16						34 3/16					
5			33 3/8				34 5/8	45 1/8	34 15/16						36 15/16					
6	5/8	16	32 15/16	6 5/8	1 5/16	1 5/16	32 15/16	34 7/16	45 1/8	15 1/8	2	5/8	1 1/2	7 9/16	34 7/8	36 7/8	2			
7			36 7/8				38 3/8	49 1/16	38 13/16						40 13/16					
8			38 11/16				40 3/16	50 7/8	40 5/8						42 5/8					
9	3/4	16	38 13/16	8 5/8	1 1/4	1 1/4	38 13/16	40 5/16	51 1/8	15 1/2	3	1	1 3/4	7 1/16	40 7/8	42 7/8	3			
10			43 3/4				45 1/4	56 1/16	45 13/16						47 13/16					
11		17	35				35	36 1/2	47 5/16				37 1/16		39 1/16					
12	1	17	37 1/2	8 5/8	1 1/4	1 1/4	37 1/2	39 1/2	50 5/16	15 1/2	3 7/8	1	2 1/4	7 1/16	39 9/16	41 9/16	4			
13			47 3/4				49 3/4	60 9/16	49 13/16				51 13/16							
14			1 1/4				48 3/8	1 3/8	48 3/8				51 1/4		61 15/16	50 7/16		52 7/16		
15	1 1/4	18	48 1/8	8 5/8	1 3/8	1 1/4	48 1/8	51	61 15/16	15 1/2	4	1 3/8	3	7 1/16	50 3/16	52 3/16	4			
16	1 1/2		57 7/8				1 15/16	1 15/16	57 7/8				60 7/8		71 1/16	15 9/16		3 1/2	59 15/16	61 15/16
17	1 3/4		19				66 1/8	66 1/8	69 1/8				80 3/16		15 9/16	4		68 3/16	70 3/16	
18	2	19	64 1/8	12 3/4	2 3/4	2 3/4	64 1/8	68 1/8	78 11/16	14 7/8	4	2 1/4	4 9/16	7	66 5/16	68 5/16	4			
19	2 1/4		73 1/8				73 1/8	77 5/8	88 1/8	15 7/16			5		75 5/16	77 5/16				
20	2 1/2		20				86 1/8	86 1/8	90 5/8	101 11/16			15 15/16		5 9/16	88 5/16		90 5/16		
21	2 3/4	21	95 7/8	12 3/4	3 5/8	3 5/8	95 7/8	99 3/8	113 3/16	15	4	2 3/4	6 1/4	9 5/16	98	100	4			
22	3		120 1/8				124 1/8	138 7/16	15 1/2	3					6 5/8	122 1/4		124 1/4		

Attachment rods and nuts not furnished.
See page 180 for Type F roller and guided load column information.

See Fig. B-268 for dimensions not listed

Fig. 868

Angular Motion Spring

Size Range: 000 through 19 available

Design Features:

- Spring rates are equal to values for B-268 load tables
- The variable support has a total allowable travel range of 3½ inches.
- Working range min/max refer to the spring's load table chart.
- Assembly provides 2 inch of field adjustment in either direction.
- Self-aligned bushings permits +/- 5 degree misalignment or angular motion.
- Design virtually eliminates resultant forces and is free of friction forces.
- Allows minimum field welding.
- See catalog for more information in the spring hanger section.

Operating Temperatures:

- All components are suitable for operation of 400°F.
- The spring coils are suitable for operation at 300°F.
- Pipe clamps are suitable for operating piping temperatures as follows:
 - ASTM A 36 Carbon Steel - 650°F
 - ASTM A 516 GR. 65 Carbon Steel - 800°F
 - ASTM A 387 GR. 22 Alloy - 1075°F
 - Note: stainless steel pipe clamps available upon request.

Ordering: Specify figure number, assembly size based on hot (operating) load, cold (theoretical) load or movement and direction, extension piece, rear bracket(s), and pipe clamp size and material.

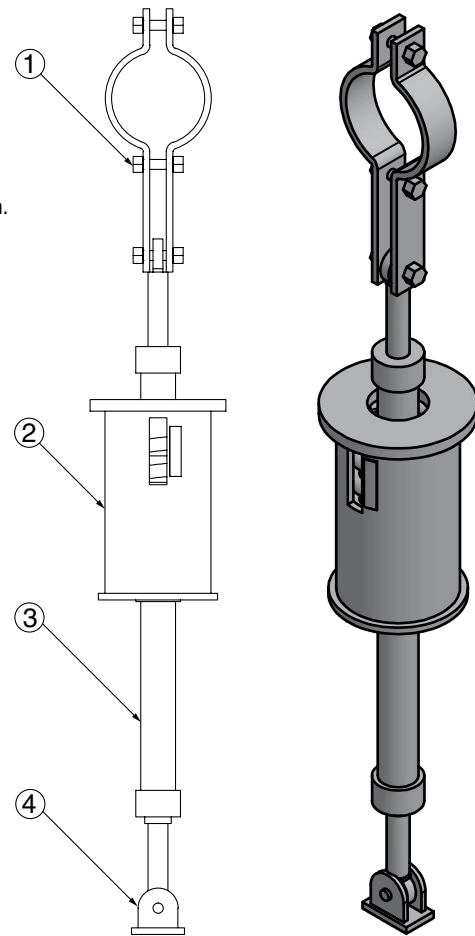


FIG. 868 ANGULAR MOTION SPRING

1	Pipe Clamp Assembly - "E-Take out Values"
2	Spring Size determined with hot and cold loads
3	Extension Piece available - Sizes A, C, 2, 4, and 5 from Figure 211 with selected spring size
4	Rear Bracket is determined by item 2

Fig. 868

Angular Motion Spring (cont.)

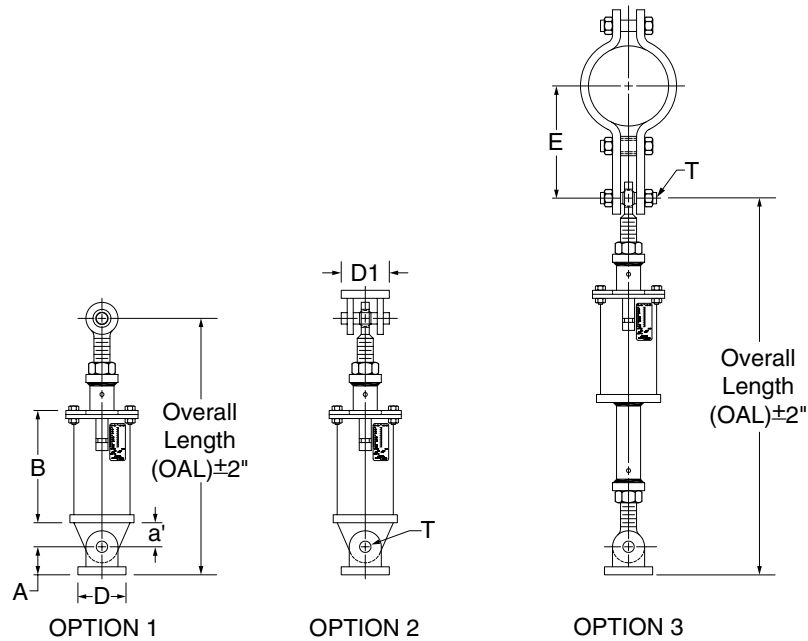


FIG. 868: DIMENSIONS (IN)

Spring Size	Extension Piece (Fig. 211)	A	a'	B	D	D1	E	T	OAL Max.
000 - 5	A	1	3/4	Refer to B Dimension Table	2	1 1/4	Refer to E-Take Out Table	3/8	50 1/2
6 - 13	C	2 1/2	1 3/4			2 3/8		3/4	80
14 - 16	2		2 7/8		1	98			
17 & 18	4	3	2 1/4		3 3/16			1 1/4	
19	5		2 3/4	6 1/8	4 1/4	1 1/2			

B DIMENSIONS (IN)

Spring Size	Casing Length B
000	5 5/8
00	7 9/16
0	6 11/16
1	7 9/16
2	8 5/16
3	7 15/16
4	
5	8 5/8
6	8 13/16
7	10
8	
9	10 7/16
10	12 1/8
11	10 7/16
12	
13	13 3/8
14	13 1/4
15	
16	16 1/16
17	18 1/8
18	18 1/4
19	20 1/2

E-TAKE OUT

Pipe Size	E-Take Out: Dimensions (in) at 650°F					E Dimension at 1075°F				
	A	C	2	4	5	A	C	2	4	5
3/4	2 7/16	-	-	-	-	8	-	-	-	-
1	2 9/16	-	-	-	-	8 1/8	-	-	-	-
1 1/4	2 11/16	-	-	-	-	8 1/4	-	-	-	-
1 1/2	4 1/8	-	-	-	-	8 3/8	-	-	-	-
2	5 1/8	6 3/8	6 3/8	-	-	8 5/8	9 3/8	9 3/8	-	-
2 1/2	5 3/8	7	7	-	-	8 7/8	9 3/8	9 3/8	-	-
3	5 15/16			-	-	9 1/8	9 3/8	9 3/8	-	-
3 1/2	6 3/16			-	-	9 3/8	9 3/8	9 3/8	-	-
4	6 1/2			7 1/4	7 1/4	-	9 3/8	9 3/8	9 3/8	-
5	7 3/4	7 3/4	7 3/4	9 3/8	10	10 1/4	10 1/4	10 1/4	-	-
6	8 3/8	8 3/8	8 3/8	10		10 3/4	10 3/4	10 3/4	10 3/4	11 1/8
8	9 3/8	9 3/8	9 3/8	11 1/4		11 1/4	11 3/4	11 3/4	11 3/4	12 3/8
10	10 1/2	10 1/2	10 1/2	12 3/4		12 3/4	12 3/4	12 3/4	12 3/4	12 3/4
12	-	11 7/8	11 7/8	13 3/8	13 3/8	-	13 3/4	13 3/4	13 3/4	14 3/4
14	-	12 5/8	12 5/8	14 1/2	14 1/2	-	14 3/8	14 3/8	14 3/8	15 3/8
16	-	13 3/8	13 3/8	15 1/4	15 1/4	-	15 3/8	15 3/8	15 3/8	16 7/8
18	-	14 5/8	14 5/8	16 3/8	16 3/8	-	16 3/8	16 3/8	16 1/2	18
20	-	15 3/4	15 3/4	17 3/4	17 3/4	-	17 3/8	17 3/8	17 1/2	19 3/8
24	-	18 1/8	18 1/8	19 7/8	19 7/8	-	19 3/8	19 3/8	20 3/8	21 1/2
30	-	21 1/4	21 1/4	23	23	-	22 3/8	22 3/8	23 1/2	24 1/2
36	-	24	24	26 1/2	26 1/2	-	25 3/8	25 3/8	26 5/8	27 1/2