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)

Quad.	Triple	98	B-268	82	000	00	0	1	2	3	4	5	6	7	8	9
Working Range (in) unshaded — Shaded Rows Show Overtravel / Figure No.					**B-268 Only**		**Fig. 82, Fig. B-268, Fig. 98, Triple & Quadruple Spring**									
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
2	1½	1	½	¼	12	31	56	81	105	136	182	244	326	434	581	775
					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
2	1½	1	½	¼	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
					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.

174
PH-11.11   For more information please visit www.anvileps.com/product/spring-hangers.com or contact eps_contact@anvilintl.com

www.anvilintl.com   ANVIL INTERNATIONAL

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 — Fig. 82, Fig. B-268, Fig. 98, Triple & Quadruple Spring													Working Range (in) unshaded — Shaded Rows Show Overtravel — 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	¼	½	1	1½	2
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					
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	¼	½	1	1½	2
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					
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.